DOCUMENT RESUME

ED 088 580 PS 007 105

TITLE	Sponsor Evaluation Activities: Formative and Summative. Volume II, Progress Report, Cognitively Oriented Curriculum, Project Follow Through.
INSTITUTION	High/Scope Educational Research Foundation, Ypsilanti, Mich.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
PUB DATE	Sep 73
GRANT	OEG-0-70-4919
NOTE	275p.; For Volumes I and III, see PS 007 104 and PS 007 106
EDRS PRICE	MF-$0.75 HC-$12.60
DESCRIPTORS	*Academic Achievement; Case Studies; Cognitive Development; *Comparative Analysis; *Elementary School Curriculum; Language Skills; *Longitudinal Studies; *Program Evaluation; Standardized Tests
IDENTIFIERS	High Scope Cognitively Oriented Curriculum; Project Follow Through

ABSTRACT

This volume, the second of three, summarizes the sponsor evaluation activities conducted during 1972-73. Included are a report on the analysis of sponsor-collected outcome data from the ten Follow Through projects, a report on the findings and formative use of the Classroom Implementation Matrix, case study reports presenting supplementary data from individual Follow Through centers, and a report on the development and field testing of a new procedure for assessing the writing of elementary school children. (Author/CS)

ED 088580

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

VOLUME II

PROGRESS REPORT
COGNITIVELY ORIENTED CURRICULUM
PROJECT FOLLOW THROUGH

September, 1973

SPONSOR EVALUATION ACTIVITIES: FORMATIVE AND SUMMATIVE

PS 007105

High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

The research reported herein was performed pursuant to Grant No. OEG-0-70-4919 with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Point of views and opinions stated do not, therefore, necessarily represent official Office of Education opinion or policy.

PREFACE

This year-end progress report analyzes Follow Through activities between July 1, 1972 and July 1, 1973 at the High/Scope Educational Research Foundation and the ten centers sponsored by the Foundation as part of the National Follow Through experiment. The centers are:

Okaloosa County, Florida
Howland-Lathrop, Chicago, Illinois
Leflore County, Mississippi
Central Ozarks, Missouri
P.S. 92, Harlem, New York
Denver, Colorado
Greeley, Colorado
Trinidad, Colorado
Riverton, Wyoming
Seattle, Washington

The report is divided into three volumes. Volume I discusses curriculum development, field service issues, and training. Volume II summarizes the 1972-73 evaluation activities. These include a report on the analysis of sponsor-collected outcome data from the ten Follow Through projects, a report on the findings and formative use of the Classroom Implementation Matrix, case study reports presenting supplementary data from individual Follow Through centers, and a report on the development and field testing of a new procedure for assessing the writing of elementary school children. Volume III presents the results of High/Scope Foundation's Analysis of Classroom Interaction, a classroom observation instrument field tested at four projects.

The first section of Volume I is a printed volume giving an overview of the High/Scope curriculum and operation. Included are discussions of theory as well as implications for curriculum practice. The second section presents general problems in the field application of the High/Scope model and a look at the High/Scope Training and Development Center (TDC), stressing the unusual importance this center has had on our evolving curriculum and on implementation at our field centers.

Volume II is divided into four sections representing separate phases of the evaluation. In the first section the standard outcome data collected by the sponsor are reported. The Stanford-Binet and achievement testing conducted since the project began in 1968 represent the most consistent aspect of the sponsor's evaluation. There have been several different approaches to evaluation and different instruments used at various times, but the Stanford-Binet and the Comprehensive Tests of Basic Skills provide the only data on a continuous longitudinal basis.

The second section of Volume II presents outcome data collected by school personnel at the Follow Through sites. This includes such things as attendance figures, parent involvement, the delivery of ancillary services, and the achievement of Follow Through and non-Follow Through students on tests administered by the school districts. These supplementary data are an important adjunct to the data that can be collected within the resources of the sponsor. It was originally hoped that a report on the supplementary data from each site would be included in this volume, but because of several factors (especially a delay in funding for the data collection and the quantity and complexity of the data received), the analyses could be completed for only five Follow Through programs. The remaining site reports will be completed later this fall and distributed to the programs.

In the third section of Volume II, the development of a new assessment procedure is described. During 1972-73 High/Scope research and curriculum staff developed criteria for evaluating the writing of Follow Through children and created procedures for eliciting, scoring, and analyzing samples of writing. Although the summative aspects of this procedure are stressed in this report, the writing assessment has obvious applications as a formative tool that could produce valuable information for teachers on the development of their students in language arts.

Volume II concludes with a report on the use of the Implementation Matrix for assessing the implementation status of classrooms. The Implementation Matrix was also developed by the High/Scope staff to provide a relatively straightforward procedure by which curriculum assistants could rate each of their classrooms on variables considered important for the operation of a Cognitively Oriented classroom.

Volume III rounds out this report of sponsor evaluation activities by presenting the results of the classroom observation study. Following up on pilot work completed during 1971-72, the analysis of classroom interactions completed this year provides several important conclusions about the operation of the Cognitively Oriented Follow Through model at the critical point of individual teachers and children interacting in the classroom.

In any study of the magnitude of this National Follow Through project, literally thousands of people are involved in making an effective and responsive matrix to contain the research and development. Parents, teachers, aides, principals, school superintendents, regional officials, federal government staff, and of course, the children themselves are deeply involved in the dynamic process that creates education. Deep appreciation for their confidence and assistance is felt by all of the Foundation staff. We could not do our work without their help, and anything we do accomplish is because of their commitment to the development of quality education for their children.

This progress report represents both a written product of specific individuals as well as the direct support of a large staff. At some points in the report, specific individuals are mentioned as responsible for specific pieces of work. In every case, given the dynamics of cooperative work within the Foundation, many staff members had significant input for shaping the area of a work. This spirit of cooperation and interrelationship is essential to the quality of the overall work undertaken by the Foundation.

Work for the coming year includes production of detailed descriptions of areas of the curriculum and refinement of the research instruments. These will be reported as they become available.

David P. Weikart
Project Director
High/Scope Cognitively
Oriented Curriculum

TABLE OF CONTENTS

SECTION 1: ANALYSIS OF SPONSOR-COLLECTED OUTCOME DATA

The Cognitively Oriented Curriculum. 1
Goals for Children 1
Evaluation Design for Outcome Variables. 3
Standard Procedures for Assessing Outcomes 4
Description of the Population. 5
Data Collection Procedures 5
Results of Outcome Assessment. 8
    Stanford-Binet Testing 8
    Achievement Testing. 12
Discussion 13
Conclusion 16

TABLE OF CONTENTS
(continued)

SECTION 2: THE IMPACT OF FOLLOW THROUGH AT THE LOCAL LEVEL: PROGRAM CASE STUDIES AND THE ANALYSIS OF SUPPLEMENTARY DATA

INTRODUCTION. 1
  Problems in Data Analysis. 2

LEFLORE COUNTY. 1
  Comparability of Follow Through and Control Children . 1
  Ancillary Services 3
  Instructional Component. 5
  Effects on the Child 12
  Parent Involvement 21
  Staff Development. 24
  Influences of Follow Through on the Schools and Community. 24
  Summary. 26

OKALOOSA COUNTY 1
  Comparability of Follow Through and Control Children . 2
  Ancillary Services 3
  Instructional Component. 3
  Effects on the Child 9
  Parent Involvement 14
  Staff Development. 15
  Influences of Follow Through on the Schools and Community. 16
  Summary. 17

RIVERTON-ST. STEPHEN's. 1
  Comparability of Follow Through and Control Children . 1
  Ancillary Services 2
  Instructional Component. 3
  Effects on the Child 9
  Parent Involvement 27
  Staff Development. 29
  Influences of Follow Through on the Schools and Community. 30
  Summary. 31

CHICAGO 1
  Comparability of Follow Through and Control Children . 1
  Ancillary Services 2
  Instructional Component. 3
  Effects on the Child 7
  Parent Involvement 9
  Staff Development. 10

TABLE OF CONTENTS
(continued)

Influences of Follow Through on the Schools and Community. 11
Summary. 12

DENVER. 1
Comparability of Follow Through and Control Children . 1
Ancillary Services 2
Instructional Component. 3
Effects on the Child 6
Parent Involvement 9
Staff Development. 11
Influences of Follow Through on the Schools and Community. 12
Summary. 13

TABLE OF CONTENTS
(continued)

SECTION 3: ASSESSING THE WRITING OF ELEMENTARY SCHOOL CHILDREN: THE DEVELOPMENT OF A PROCEDURE AND PRELIMINARY FINDINGS

INTRODUCTION. 1
  Establishing Criteria. 2
    Writing Mechanics. 3
    Style. 5
    Content. 5
  Choosing an Appropriate Task to Elicit Writing Samples. 7
  Defining the Assessment Context. 9

RESEARCH DESIGN AND PROCEDURES. 10
  The Subjects of the Study. 10
  Collection of Language Samples 11
  Scoring of the Writing Samples 12

PRELIMINARY FINDINGS AND CONCLUSIONS. 16
  Analysis Procedures. 16
  The Narrative Assignment 17
    Elements of Language Maturity. 18
    Elements of Content. 21
  The Reporting Assignment 29
    Elements of Language Maturity. 35
    Use of Relationship Words. 35
  Differences in Language Maturity Evidenced in the Two Writing Tasks. 40
  Child Behavior during Testing. 42
    Narrative Writing. 42
    Report Writing 45

SUMMARY AND CONCLUSIONS 52

REFERENCES. 55

APPENDIX A: SCORING PROCEDURES FOR T-UNITS

APPENDIX B: SCORING PROCEDURE FOR TASK I (REPORTING)

APPENDIX C: SCORING PROCEDURE FOR TASK II (NARRATING)

APPENDIX D: SCHEDULES OF INSTRUCTIONS AND MATERIALS USED IN ADMINISTERING LANGUAGE ARTS ASSESSMENT TASKS

APPENDIX E: DEVELOPING CHILDREN'S WRITING IN THE COGNITIVE CURRICULUM

TABLE OF CONTENTS
(continued)

APPENDIX F: BRIEF DESCRIPTIONS OF THE LANGUAGE ARTS APPROACH USED IN NON-FOLLOW THROUGH SECOND GRADE CLASSROOMS

APPENDIX G: PUPIL CHECKLIST FOR LANGUAGE ARTS ASSESSMENT TASKS

APPENDIX H: EXAMPLES OF NARRATIVE WRITING HAVING ELEMENTS OF ORGANIZATION AND CONNECTEDNESS

APPENDIX I: SAMPLES OF PROCESSED NARRATIVE AND REPORTING STORIES

TABLE OF CONTENTS
(continued)

SECTION 4: FORMATIVE EVALUATION OF PROGRAM IMPLEMENTATION IN FOLLOW THROUGH

The Need for Evaluation of Program Implementation. . . 1
Formative Evaluation in the Context of Implementation. 2
Instrument Development 3
Methodology. 7
Formative Feedback 10
    Effects on Teacher Training and Curriculum Consulting 15
    Summary. 17
Results and Discussion 18
    Evidence of Reliability. 18
    Cautions for Interpretation. 20
    Implementation Findings. 21
Conclusions. 25
Reference. 28

SECTION 1

ANALYSIS OF SPONSOR-COLLECTED OUTCOME DATA

September, 1973

Prepared by

Mary E. Morris
John M. Love

High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

The research reported herein was performed pursuant to Grant No. OEG-0-70-4919 with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Point of views and opinions stated do not, therefore, necessarily represent official Office of Education opinion or policy.

The Cognitively Oriented Curriculum

The High/Scope Foundation's participation as a sponsor in National Follow Through dates from the fall of 1968. The development of the Cognitively Oriented Curriculum began in 1962 in a preschool education project known as the Ypsilanti-Perry Preschool Project. In 1968 the curriculum development effort was extended to the early elementary grades under the auspices of the national Follow Through program.

The orientation of the High/Scope Foundation's Cognitively Oriented Curriculum derives from cognitive theories of Piaget which look at child development as both a learning and a maturational process. The key to the orientation of theorists utilizing this point of view is the interaction of the child as an organism with the complex stimuli of the external world. While growth does not just "happen", neither can it be "taught" even when understood. From this orientation has come a healthy respect for experimentation on the part of the learner, a utilization of real experiences, and a feeling that obtaining "wrong" answers to important questions can sometimes facilitate the development of processes to achieve "right" answers later.

The long-range goal of the Foundation's curriculum development efforts is to produce a comprehensive curriculum for children through grade 3 which includes a model for instructional organization and teaching, a cognitive and academic skills component, a related method for staff operation and supervision, and a quality control system. The curriculum is based upon the theories of Piaget as mediated by experience in field applications and supported by research data. Of special importance is parent participation in the educative process through both policy advisory groups and direct home teaching. The curriculum includes specially developed program procedures which stress cognition rather than simple skill learning, but skills are included as necessary for the children in the program.

Goals for Children

A large number of the curriculum goals deal with processes, i.e., they relate to the classroom processes that describe the relationships the child experiences with teachers, with materials, and with other children. The assessment of these important goals is the subject of Volume III of this report. There are also a number of goals that have been specified in terms of educational outcomes. Although the curriculum is under continuous review, the most recent statement of goals[1] encompasses five areas of child behavior. Children will show growth in:

- Cognition (or thinking ability), by demonstrating ability to function at increasingly higher levels in tasks requiring
  - classification
  - seriation
  - spatial relations
  - time relations
  - number concepts
  - causality
  - representation of ideas
- Social development, by demonstrating increasing ability to
  - recognize self as an individual
  - recognize self as a member of a group
  - recognize self in relation to social, physical environment
  - interact with teachers and other children
  - plan and evaluate for self
- Academic skills and learning processes, by demonstrating increasing competence in utilizing the skills and processes emphasized in the following academic programs:
  - Taba Social Studies Curriculum
  - AAAS and SCIS science programs
  - Nuffield mathematics
  - Language Experience in Reading
- Physical skills (large and small muscle)
  - balance
  - rhythm
  - coordination
- Music and art skills and interests
  - enjoyment
  - expression
  - awareness of environment

---

[1] High/Scope Educational Research Foundation. The High/Scope early elementary program. Ypsilanti, Michigan: Author, 1973.

Evaluation Design for Outcome Variables

The design for the assessment of child outcomes is a longitudinal design with replication. Table 3 illustrates this design. Each group of children that enters a Follow Through program constitutes a Wave. Wave 1 consists of all the children who entered the High/Scope Foundation's Follow Through programs in the fall of 1968, the first year of operation. In that year there were three centers--Leflore County, Mississippi; Okaloosa County, Florida; and P.S. 92, New York City. In the second year of operation, Wave 1 children advanced to the next grade level, and Wave 2 children entered those programs and two new centers (Central Ozarks, Missouri, and Howland and Lathrop Schools in Chicago). In the third year, five Western centers were added so that the first group of children entering those programs are included in Wave 3. If, as expected, the entering classes in 1973-74 (Wave 5) are to be the last group of children that complete the third grade under the High/Scope Foundation sponsorship, they will complete the longitudinal design. Outcome data will then be available for children in ten centers, with five replication groups in three centers, four replications in two centers, and three complete replications in the other five locations.

This design is most complete for the Stanford-Binet data. As Table 3 illustrates, the Stanford-Binet was administered in the fall to the original entering grade at each site, to a sample from each class every spring as the children progressed through the grades, and to a group of third grade controls. A random sample (stratified by classroom) of 45 children is selected from each grade level in each site for testing. The Pupil Observation Checklist is administered according to the same schedule. The Comprehensive Tests of Basic Skills is administered only to third graders (both Follow Through and non-Follow Through) and the Classroom Behavior Checklist is administered on a limited basis--the teacher completes the ratings for the third grade Follow Through and non-Follow Through children who are tested on the Stanford-Binet and the CTBS.

In the first year of the evaluation it became apparent that obtaining comparison children to serve as non-Follow Through controls would be extremely difficult. In some school systems, all classrooms became a part of Follow Through so controls had to be selected from different schools with a greater chance that they would be impossible to match on such factors as SES and ethnicity. Where there were Follow Through and non-Follow Through classes in the same school, the possibility of dispersion effects existed, lessening the likelihood of obtaining a true control group. In an attempt to circumvent these problems a "retroactive control" design was adopted in 1969-70. According to this design, non-Follow Through third graders were selected from the same schools in which Follow Through was implemented, but they were tested before Follow Through children reached the third grade. The testing of the third grade retroactive controls was completed in the spring of the first year of a center's operation, except at the three centers that were already operating. In those centers, the retroactive controls were tested while the Follow Through children were in their second year of the program. When Follow Through children are tested at the completion of third grade, their scores are compared "retroactively" with the control scores.

In addition to comparing Follow Through children with controls, it was felt necessary to be able to compare Follow Through children's third grade data with test scores obtained at the time they first entered the program. The procedure adopted to permit this comparison was a compromise dictated by data collection costs. Rather than test every Wave in the fall of their entering year, the first entering group at each site was tested. This procedure provided an estimate of the fall entering performance.

Standard Procedures for Assessing Outcomes

The mainstay of the outcome evaluation has been the Stanford-Binet (for general intelligence), the Pupil Observation Checklist (for ratings of social and affective behaviors) and, since 1969-70, subtests of the Comprehensive Tests of Basic Skills (for scholastic achievement). For a general assessment of overall intellectual functioning, the Stanford-Binet is one of the more widely used instruments, yielding reliable scores with a better degree of predictive validity than most tests.

Several rating scales have been tried out in attempts to assess the social/affective dimensions of the children's growth. The Pupil Observation Checklist (POCL) was agreed upon in 1969-70 because it was found to yield fairly reliable ratings on some important social dimensions, such as cooperation, self-confidence, and sociability. The scale consists of 25 items checked by the psychologist who administers the Stanford-Binet. The resulting scores serve not only to provide an indication of social growth fostered by the program, but can also be used to interpret the Stanford-Binet (e.g., extreme shyness may help explain a low IQ score). The Classroom Behavior Checklist (CBCL) is a rating scale completed by the teacher for each child in the Binet sample. The 15 items assess four factors of classroom behavior: academic, social, disruptive, and dependency behavior. The CBCL provides information to supplement the POCL, but is administered on a more limited scale because it takes a great deal of the teachers' time to complete. Analyses of the POCL and CBCL will be presented in subsequent reports.

For assessing achievement of a more academic nature in a standardized manner, the Metropolitan Reading Readiness Test (MRRT) was used the first year. It was soon dropped, however, because of errors in teacher administration, a large standard error of measurement, outdated items, and inclusion of items not related to the experiences of the participating children. The Comprehensive Tests of Basic Skills (CTBS) was substituted as a terminal outcome measure and administered to all third grade retroactive controls. Follow Through children are scheduled to receive the same test when they reach third grade, as some already have in Mississippi, Florida, New York, the Central Ozarks, Chicago, and Riverton. In the High/Scope Foundation's evaluation, the CTBS subtests on reading vocabulary, reading comprehension, arithmetic concepts, arithmetic applications, and study skills are administered since these subtests are most relevant to the concepts taught in the curriculum.

Description of the Population

Tables 1 and 2 present demographic data for each of the Follow Through centers sponsored by the High/Scope Foundation. It can be seen that the population of High/Scope Follow Through children includes a wide range of characteristics. A random sample of 45 children from each grade level at each center were involved in the assessment described here. See Table 3 for information on the grade levels that were tested at each site.

Data Collection Procedures

Collection of outcome evaluation data was arranged through local project directors. Project directors or school psychologists were called upon to recommend Stanford-Binet testers for their sites. Once identified, testers were sent a letter of contract outlining payment and testing procedures to be followed. Arrangements concerning testing schedules were made directly with the project director and the chief tester. Data were collected between the middle of April and the end of the school year. Each Binet tester was responsible for scoring the Binets he administered, in addition to rating each child tested on the POCL.

Administration of selected subtests of the CTBS was arranged independently by the project directors on site. In most instances,

Table 1

Geographical Locations, General Community Types, and Ethnic Distributions of Students in High/Scope Sponsored Follow Through Projects within the United States*

Center	Location in U.S.A.	Area Type		American Indian	Black	American Mexican	Oriental	Puerto Rican	White	Other	TOTA
P.S. 92 Harlem, New York	North East	Large, Urban	No. of Students	0	433	0	1	6	0	0	440
			% of Total Students	0	98.40	0	0.22	1.36	0	0	99.9
Okaloosa County, Florida	South East	Small, Rural	No. of Students	0	281	0	1	0	75	0	357
			% of Total Students	0	78.79	0	0.28	0	21	0	100.0
Leflore County, Mississippi	South Central	Small, Rural, Agricultural	No. of Students	0	446	0	0	0	30	0	476
			% of Total Students	0	93.69	0	0	0	6.30	0	99.9
Chicago, Illinois	North Central	Large, Urban	No. of Students	0	400	0	0	0	0	0	400
			% of Total Students	0	100	0	0	0	0	0	100
Central Ozarks, Missouri	South Central	Small, Rural, Agricultural	No. of Students	0	0	0	0	0	680	0	680
			% of Total Students	0	0	0	0	0	100	0	100
Denver, Colorado	Rocky Mountain	Large, Urban	No. of Students	3	100	201	3	0	53	0	357
			% of Total Students	0.83	27.77	55.83	0.83	0	14.72	0	99.98
Trinidad, Colorado	South West	Small town, Rural	No. of Students	0	1	238	0	0	107	0	346
			% of Total Students	0	0.28	68.78	0	0	30.92	0	99.98
Greeley, Colorado	Rocky Mountain	Small city, Rural, Agricultural	No. of Students	0	0	205	0	0	114	0	319
			% of Total Students	0	0	64.26	0	0	35.73	0	99.99
Riverton, Wyoming	North West Mountain	Small town, Rural	No. of Students	100	0	25	0	0	182	0	307
			% of Total Students	32.57	0	8.14	0	0	59.28	0	99.99
Seattle, Washington	North West	Large, Metropolitan	No. of Students	14	295	2	28	0	114	0	480
			% of Total Students	2.91	61.45	0.41	5.83	0	23.75	5.62	99.97
Total Distribution of Follow Through Students Sponsored by High/Scope			No. of Students	114	1984	568	33	20	1217	27	3963
			% of Total Students	2.87	50.06	14.33	0.83	.50	30.70	0.68	99.97

---

*Based on data from 1972-73 Follow Through Continuation Proposals

Table 2

Socio-Economic Status of Students in High/Scope Sponsored Follow Through Projects within the United States

Center	Pre-Follow Through Experience	Socio-Economic Status		
		Low Income	Non-Low Income	TOTAL
P.S. 92, New York	Head Start	440	0	440
	Non-Head Start	85	0	85
Okaloosa County, Florida	Head Start	252	25	277
	Non-Head Start	59	21	80
Leflore County, Mississippi	Head Start	179	0	179
	Non-Head Start	297	0	297
Chicago, Illinois	Head Start	335	0	335
	Non-Head Start	65	0	65
Central Ozarks, Missouri	Head Start	482	0	482
	Non-Head Start	198	0	198
Denver, Colorado	Head Start	176	19	195
	Non-Head Start	109	56	165
Trinidad, Colorado	Head Start	102	13	115
	Non-Head Start	133	98	231
Greeley, Colorado	Head Start	139	44	183
	Non-Head Start	51	85	136
Riverton, Wyoming	Head Start	162	1	163
	Non-Head Start	36	108	144
Seattle, Washington	Head Start	236	24	260
	Non-Head Start	162	58	220

the achievement testing was carried out by school testers or teachers. Third grade teachers of children who had been selected for Binet testing were asked to fill out the CBCL.

The sponsor selected the random samples from class rosters submitted by the program. Blank test forms and lists of children were then sent to project directors prior to testing. Completed tests were mailed back to the High/Scope Foundation for verification and data processing.

Results of Outcome Assessment

This report will focus on the findings from two of the measures of product variables: the Stanford-Binet Intelligence Scale (S-B) and the CTBS.

Stanford-Binet Testing

Table 3 summarizes the results of five years of Stanford-Binet testing. The first wave of children entered the program in the fall of 1969 (in Leflore County, Mississippi; Okaloosa County, Florida; and P.S. 92, New York City). A blank in the kindergarten column of Table 3 indicates that there were no kindergarten classes so children entered at the first grade level. Children entering the program in the fall of 1969 were designated Wave 2 children. New beginning classes were added to the programs in Mississippi, Florida, and New York. The entering classes in the two new centers (Central Ozarks, Missouri; and Howland and Lathrop Schools, Chicago) were also designated Wave 2. Children entering in the fall of 1970 were designated Wave 3 children; Wave 3 included new entering classes in the five established centers plus the children in five new centers (Denver, Greeley, and Trinidad, Colorado; Seattle, Washington; and Riverton, Wyoming). The fall 1971 entering children were part of Wave 4, and Wave 5 children entered in fall 1972. Because of the staggered pattern of entry into the High/Scope Foundation's Follow Through programs, some centers have had five entering groups, some have had four, some three, and some only two. Thus, the results are more complete for some centers than for others, although the overall evaluation remains incomplete until all children who have entered the program complete the third grade.

The first results to note in Table 3 are the means for the first year of operation in each center's column labeled "fall entering year" and the next column with scores in it. During the first two years in Florida, children were tested in the fall and the spring of the year. Thereafter testing was done only in the spring. In Mississippi, Florida, and New York, all Wave 1 children were tested during the entering year so that

Table 3. Means and Standard Deviations of Stanford-Binet Scores for Follow Through and Third Grade Control Children

Center	Wave	Fall Entering Year			GRADE LEVEL (Spring) Kindergarten			First Grade			Second Grade			Third Grade			Third Grade Controls		
		$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N
Leflore Co., Mississippi	1	79.0	13.4	134				89.3	12.9	179	82.0	10.5	43	84.9	9.3	51	73.7	16.4	64
	2							85.0	11.8	46	87.3	8.3	44	90.0	14.3	46			
	3							87.9	9.5	45	90.6	13.3	50	86.1	11.1	45			
	4							89.8	9.7	49	86.8	9.7	43						
	5							88.5	10.6	43									
Okaloosa Co., Florida	1	89.0	13.7	109				94.3	11.9	96	91.5	15.3	44	87.0	12.6	43	88.5	13.6	61
	2	92.8	10.9	90				93.8	9.9	47	90.2	14.2	46	89.6	11.9	44			
	3				94.3	12.3	45	93.1	11.9	45	86.9	10.1	42						
	3							88.3	10.7	43	87.9	12.5	45	82.3	10.9	46			
	4				98.2	12.6	45	90.1	16.4	43									
	5				89.4	12.7	45												
P.S. 92, New York	1	91.5	12.0	97	94.3	11.9	70	92.9	13.5	35	102.2	14.8	47	95.1	17.0	45	88.9	14.2	48
	2				97.8	14.0	40	102.4	15.0	44	97.4	12.8	44	92.2	13.3	43			
	3				97.0	11.2	45	102.1	15.8	45	98.6	12.3	44						
	4				103.2	13.2	43	96.2	11.1	43									
	5				94.2	11.0	41												
Central Ozarks, Missouri	2	105.5	15.2	13	100.0	14.7	44	109.0	18.8	14	112.5	16.5	12	104.7	9.8	11	100.8	13.3	41
	3				102.5	13.1	45	98.3	16.3	12	99.3	15.9	12						
	4				113.3	11.3	45	115.7	16.7	13									
	5				106.7	11.5	42												
	2	108.9	17.6	32				101.0	16.8	45	110.2	17.4	45	106.9	12.9	42			
	3							111.5	18.1	31	114.6	15.8	32	104.4	14.1	34			
	4							109.8	15.0	32	104.4	14.4	32						
	5							110.6	16.5	32									
Chicago	2	89.4	13.4	44	94.9	14.7	43	93.8	17.1	41	95.7	16.1	33	92.0	17.2	44	83.5	14.1	46
	3				91.0	13.4	49	93.6	14.4	45	86.4	13.6	45						
	4				95.9	13.2	46	92.8	13.0	44									
	5				91.2	10.1	47												
Denver	3	93.4	11.6	44	98.2	16.2	44	94.1	12.1	27	93.7	13.4	42				89.0	12.4	44
	4				99.2	13.8	45	97.2	13.7	45									
Greeley	3	96.9	12.5	45	99.6	12.1	44	95.1	14.3	45	98.6	15.3	39				92.0	13.9	45
	4				100.0	13.7	45	102.8	15.3	40									
	5				97.5	17.4	45												
Trinidad	3	95.1	14.1	38	99.8	16.1	73	109.9	17.7	43	98.4	18.2	40				94.6	13.0	44
	4				113.1	15.5	45	101.8	19.0	41									
	5				98.7	17.1	45												
Seattle	3	102.8	16.8	44	109.9	16.1	41	102.9	14.7	45	99.7	17.3	44				99.5	12.7	39
	4				101.9	14.1	44	100.1	16.1	45									
	5				101.1	16.5	40												
Riverton	3	92.2	12.7	45				100.5	12.0	42	96.1	11.3	43	95.7	13.7	43	99.8	11.2	45
	4				105.0	13.8	45	100.2	12.4	45									
	4							99.4	10.4	45	98.9	10.5	45						
	5				104.8	15.6	44												

fall-spring comparisons could be made using an analysis of variance for repeated measures. In all other centers, where an independent random sample was selected for testing each time, independent-groups analyses of variance were performed.

Four of the ten centers showed a statistically significant ($p < .05$) increase in mean score from fall to spring. Leflore County, Mississippi had the largest increase (10.3 points); Riverton, Wyoming increased 8.3 points; Seattle, Washington increased 7.1; and Okaloosa County, Florida children (who entered the program in the fall of 1968) increased 5.3 points. In the Central Ozarks there was a significant decrease of 7.9 points during the first year in the group that entered at the first grade level. The mean change for all ten centers was a 4.2 increase on the S-B.

Three other comparisons can be made from the data in Table 3:

- Comparisons between Follow Through and the third grade control children;
- Comparisons across years within each wave at each center;
- Comparisons within grade levels (across waves) at each center.

There were three waves each in Mississippi, Florida, and Missouri, two waves in New York, and one wave each in Chicago and Riverton for which a comparison between Follow Through and control third graders was possible. Six of the 13 possible comparisons with the controls were found to be significant when analyzed by the analysis of variance. In Mississippi, the means for Waves 1, 2, and 3 third graders (84.9, 90.0, and 86.1, respectively) were significantly higher than the 73.7 mean score of the controls (for Wave 1, $F = 18.8$; $df = 1,113$; $p < .05$; for Wave 2, $F = 29.1$; $df = 1,108$; $p < .05$; and for Wave 3, $F = 19.4$; $df = 1, 107$; $p < .01$). The Chicago wave which had completed the third grade also obtained S-B scores significantly above those of the retroactive control group (92.0 vs. 83.5)--$F = 6.7$; $df = 1,88$; $p < .05$. In Missouri there were two separate groups of Wave 2 children, one entering at the kindergarten level and the other entering at the first grade. The mean for the group that had entered at the first grade level (106.9) was significantly higher than the 100.8 mean score of the controls ($F = 4.5$; $df = 1,82$; $p < .05$). The mean of 82.3 for the Wave 3 third graders in Florida was significantly lower than the control mean of 88.5 ($F = 6.4$; $df = 1,105$; $p < .05$).

In comparing year-to-year progress within each wave of Follow Through children, analyses of variance for independent groups were performed since independent random samples were selected for testing each year. In seven centers significant changes across years were found.

In Mississippi, Wave 1 showed a downward trend in scores across three years ($F = 7.8$; $df = 2,270$; $p < .05$). Nevertheless, this group had shown a significant increase during the entering year and the third grade score of 84.9 was still above the fall entering year score of 79.0. Furthermore, the third grade Follow Through mean score was higher than that of the third grade controls.

In Florida there were two separate groups of Wave 3 children, one group entering at the kindergarten level and the other entering at the first grade. Both of the Wave 3 groups and Waves 1 and 4 showed significant change across the years, and these were in the direction of decreasing scores (Wave 1--$F = 4.7$; $df = 2,180$; $p < .05$; Wave 3, entering kindergarten--$F = 5.2$; $df = 2,129$; $p < .01$; Wave 3, entering first grade--$F = 3.9$; $df = 2,131$; $p < .05$; Wave 4--$F = 6.9$; $df = 1,86$; $p < .02$). Even though Wave 1 showed decreasing scores across three years in Follow Through, it did not differ significantly from the controls at the end of the third grade.

In New York, Wave 1 showed a significant change across years, increasing from kindergarten through second grade with a subsequent decrease at third grade ($F = 3.9$; $df = 3,193$; $p < .05$); at third grade the apparently large difference of Follow Through over the control group was not reliable. Wave 2 scores increased from kindergarten to first grade but then declined through the third grade; the overall F test was significant ($F = 3.9$; $df = 3,167$; $p < .05$). Wave 4 scores decreased from kindergarten to first grade ($F = 7.1$; $df = 1,84$; $p < .05$).

In Missouri, both groups of Wave 2 children showed significant changes across three years of Follow Through participation (entering kindergarten--$F = 2.7$; $df = 3,77$; $p < .05$; entering first grade--$F = 3.8$; $df = 2,129$; $p < .05$). For both groups, scores increased through the second grade and then decreased, but the spring third grade mean was still above the spring entering year mean. The Wave 3 children who entered at first grade showed a similar increase followed by a decrease ($F = 3.5$; $df = 2,94$; $p < .05$) although at third grade they did not differ significantly from the controls.

In Chicago, Wave 3 showed an increase and then a decrease in scores across three years ($F = 3.2$; $df = 2,136$; $p < .05$).

Wave 3 children in Trinidad also showed first an increase and then a decrease in their mean score across their years in Follow Through ($F = 6.0$; df = 2,153; $p < .01$). Wave 4 children in this center showed a decrease in scores from the first year to the second year ($F = 9.1$; df = 1,84; $p < .01$). Finally, Wave 3 in Seattle showed a significant decrease in scores from the kindergarten to the second grade ($F = 4.3$; df = 2,127; $p < .02$). There were no significant longitudinal changes in Denver, Greeley, or Riverton.

Comparisons of year-to-year changes across waves within each grade level were made to provide information as to the possible changing impact of Follow Through at a particular grade level. Such comparisons could not be made in Florida or Riverton because the grade level at which children entered the program was not consistent. In Missouri, two sets of comparisons were made for each grade level depending on whether the group entered at the kindergarten level or the first grade. Seven of the centers showed significant changes within grade levels.

The second grade in Mississippi showed an increasing trend across the years until Wave 4, when they decreased slightly, although the Wave 4 mean was above the first year mean of 82.0($F = 4.9$; df = 3,176; $p < .01$). The first grade in New York also showed an increasing trend until Wave 4 which showed a decrease, although this score was also above the first year mean of 92.9 ($F = 4.3$; df = 3,163; $p < .01$). The kindergarten children in New York showed a significant increase in scores until Wave 5 when they showed a decrease ($F = 4.2$; df = 4,234; $p < .01$). The entering kindergarten and entering first grade in Missouri showed significant changes across time. The entering kindergarten showed an increasing trend for three years and then a decrease, although the mean was above the first year mean of 100.0 ($F = 9.3$; df = 3,172; $p < .01$). The entering first grade increased in the second year and was then stable for the next two years ($F = 3.5$; df = 3,136; $p < .02$). In Chicago, the second grade showed a downward trend across the years ($F = 7.7$; df = 1,76; $p < .01$), and in Greeley, the first grade showed a significant upward trend ($F = 5.6$; df = 1,83; $p < .02$). The kindergarten in Seattle showed a decrease in mean scores from Wave 3 to Wave 4 ($F = 4.0$; df = 2,122; $p < .05$). In Trinidad the kindergarten showed an increase from Wave 3 to Wave 4 and then a decrease from Wave 4 to Wave 5 ($F = 11.6$; df = 2,160; $p < .01$). The first grade showed a decrease from Wave 3 to Wave 4 ($F = 4.0$; df = 1,82; $p < .05$).

Achievement Testing

Since the CTBS is employed as a summary measure of standard scholastic achievement attained by the end of the third grade, it is only administered once--in the spring of the children's final year of Follow Through participation (the controls, in most cases, were tested in the first year of each center's operation). The five subtests of the CTBS that were administered are reading vocabulary, reading comprehension, arithmetic concepts, arithmetic application, and study skills. Subtests were combined to yield subtotals for reading, for arithmetic, and a total for the four subject-area subtests.

Comparisons of Follow Through and control achievement scores were possible in the six centers which have "graduated" third graders. In three of these centers, three waves of children have completed the third grade; in one of the centers two waves of children have completed this grade and in two of the centers a single wave completed the third grade. Thus, there are 13 Follow Through groups that could be compared with controls. With the exception of Okaloosa County, Florida and Riverton, Wyoming, where Follow Through children scored below controls, the general finding was one of Follow Through performing as well as the controls in the areas measured by the CTBS. All of the data based on the CTBS testing are presented in Table 4.

Discussion

The analyses of outcome measures present an unclear picture of the effects of Follow Through. On the Stanford-Binet, when children who have completed the third grade were compared with the retroactive control group, there were five comparisons favoring Follow Through, seven in which there was no difference, but only one in which the controls scored higher than Follow Through.

The longitudinal comparisons indicated that in three centers there were no significant year-to-year changes. In three centers comparisons generally showed a downward trend in S-B scores. In three centers there were mixed results, with some waves showing a general downward trend and other waves showing the pattern of increasing scores as the children moved through the grades, or a pattern of an increase for two or three years followed by a slight decline. In these three centers there were more waves for which the trend was increasing than for which the trend was decreasing. There was one center in which the significant result was a trend toward increasing S-B scores from spring to spring.

These longitudinal comparisons should be examined in relation to the entering year changes, since the above analyses did not control for the initial level of the groups in the fall

TABLE 4

CTBS Means and Standard Deviations--Third Grade, Follow Through and Controls

	READING						ARITHMETIC						4-subtest Total		Study Skills	
	Vocab.		Comp.		Total		Concepts		Applic.		Total					
	X̄	SD	X̄	SD	X̄	SD	X̄	SD	X̄	SD	X̄	SD	X̄	SD	X̄	SD
Leflore Co., Mississippi																
Wave 1, N = 49	16.1	6.5	18.5	7.1	34.6	13.0	12.5	5.7	8.1	3.7	20.3	8.7	54.9	20.3	13.1	4.9
Wave 2, N = 46	12.6	5.0	17.4	7.1	29.7	11.1	13.0	5.3	8.9	3.5	21.7	8.3	50.5	19.0	11.4	3.5
Wave 3, N = 45	14.1	5.5	16.9	6.4	30.9	10.7	12.1	4.8	7.6	3.3	19.2	7.6	50.3	16.6	10.4	3.5
Controls, N = 45	14.8	7.1	19.6	8.0	34.4	14.3	12.4	5.3	8.6	4.1	19.6	9.0	54.0	22.0	11.6	4.9
F, Wave 1 vs. Controls	< 1		< 1		< 1		< 1		< 1		< 1		< 1		2.0	
F, Wave 2 vs. Controls	2.7		2.0		3.0		< 1		< 1		1.2		< 1		< 1	
F, Wave 3 vs. Controls	< 1		3.1		1.6		< 1		1.7		< 1		< 1		1.7	
Okaloosa Co., Florida																
Wave 1, N = 43	11.0	4.9	14.2	5.8	25.3	9.6	9.7	4.2	7.0	3.0	16.6	6.6	41.9	14.4	10.7	5.0
Wave 2, N = 42	14.2	7.9	17.5	8.6	31.7	15.3	10.5	5.8	7.6	4.6	17.4	9.7	48.7	23.6	12.3	6.9
Wave 3, N = 31	9.2	4.1	12.2	4.9	21.4	8.0	9.7	4.8	5.8	3.1	15.2	7.4	36.6	14.3	9.2	4.6
Controls, N = 61	16.7	8.2	21.2	9.4	37.9	16.5	13.2	5.9	7.8	4.2	21.1	9.2	58.7	24.9	11.6	5.1
F, Wave 1 vs. Controls	16.2*		18.4*		20.2*		10.9*		1.2		7.3*		15.7*		< 1	
F, Wave 2 vs. Controls	2.4		4.1*		3.7		5.0*		< 1		3.6		4.1		< 1	
F, Wave 3 vs. Controls	22.8*		24.5*		27.4*		7.9*		5.5*		9.3*		20.6*		4.7*	
P.S. 92, New York																
Wave 1, N = 45	15.3	7.8	19.8	8.2	35.1	15.0	11.1	5.8	9.0	3.5	20.1	8.5	55.2	22.3	12.4	5.0
Wave 2, N = 47	16.2	7.7	18.2	8.1	32.6	16.0	10.7	5.2	7.2	3.7	17.6	8.7	48.9	24.1	11.4	5.2
Controls, N = 46	18.0	9.8	21.8	9.7	39.3	19.5	12.5	5.3	8.1	4.2	19.7	9.3	57.8	27.4	10.4	5.8
F, Wave 1 vs. Controls	2.1		1.1		1.3		1.5		1.2		< 1		< 1		2.7	
F, Wave 2 vs. Controls	< 1		3.3		3.3		2.6		1.0		1.3		2.8		< 1	
Central Ozarks, Missouri																
Wave 2, N = 45	22.9	9.4	27.0	9.2	50.0	17.7	19.4	6.2	11.9	5.1	31.3	10.5	80.4	28.0	18.0	5.6
Wave 2, N = 11	21.5	8.3	28.8	9.9	47.3	17.2	17.9	6.8	12.0	5.3	29.9	11.9	77.2	28.3	16.9	6.9
Wave 3, N = 51	24.2	8.2	28.7	8.7	52.9	16.4	19.1	5.2	12.7	4.7	31.8	9.1	84.7	24.2	17.7	5.7
Controls, N = 45	25.6	8.6	27.5	10.3	53.0	18.3	18.8	5.8	12.0	4.7	30.8	10.0	83.6	27.3	17.0	5.4
F, Wave 2 vs. Controls	1.9		< 1		< 1		< 1		< 1		< 1		< 1		< 1	
F, Wave 2 vs. Controls	2.0		< 1		< 1		< 1		< 1		< 1		< 1		< 1	
F, Wave 3 vs. Controls	< 1		< 1		< 1		< 1		< 1		< 1		< 1		< 1	
Chicago																
Wave 2, N = 39	16.0	9.0	19.7	10.1	34.6	18.8	12.1	5.9	8.5	4.8	19.3	10.2	50.3	30.0	10.3	5.1
Controls, N = 44	12.4	6.0	15.7	7.8	27.7	12.7	10.4	5.4	7.0	3.3	17.1	8.3	44.0	20.2	9.8	2.8
F, Wave 2 vs. Controls	4.7*		3.9		3.8		1.7		2.5		1.1		1.3		< 1	
Riverton																
Wave 3, N = 32	20.6	8.4	23.3	11.4	43.9	19.4	15.1	6.6	11.6	4.2	26.7	10.2	70.7	28.4	15.3	5.1
Controls, N = 41	28.3	8.0	32.2	8.4	59.8	16.3	20.5	5.4	14.4	4.2	35.0	9.2	93.1	25.3	18.8	4.2
F, Wave 3 vs. Controls	15.6*		14.9*		14.3*		14.1*		7.7*		12.9*		12.6*		10.2*	

of the entering year. There were five centers in which Follow Through children showed significant fall-spring increases during the program's first year. For these centers the subsequent longitudinal changes were either nonsignificant or showed significant decreases. This suggests that if the program has a sizeable impact on children during its initial year of implementation, the gains are not likely to increase. It should not be concluded that the gains are lost, however, since in most cases, even after declines in S-B mean score, the third grade mean was equal to or higher than the third grade control mean.

In seven centers there were one or more grade levels (a total of ten) which showed a significant change in S-B score across waves. Of these ten significant comparisons, three showed the pattern of decreasing mean score from earlier to later waves. For seven comparisons, representing five centers, the general pattern was one of increasing scores (in two of these comparisons the predominately increasing pattern was interrupted by a decrease from one wave to the next, but the mean for the most recent wave did not fall below the mean for the initial wave). In general, then, at a given grade level children are obtaining higher scores in more recent years.

As a general, global measure of program effectiveness, the Stanford-Binet yields mixed findings that are difficult to interpret. Looking at the findings longitudinally, the overall pattern suggests improvement in performance, but there are waves in several centers that show a general decrease. Without knowing more about the circumstances surrounding the implementation each year in each center, it is difficult to account for this. The information contained in the site reports and data from the ratings of implementation and from the analysis of classroom interactions represent attempts to discover more about the process that might account for the outcomes. These other evaluation efforts are reported in other sections of this report.

When children who have completed the third grade of Follow Through are compared with the controls, Follow Through appears more consistently successful. In only one of 13 comparisons did the controls score higher, and in five of the comparisons the Follow Through mean was significantly above the control mean.

One reason for the development of alternative assessment procedures by the sponsor is the increasing dissatisfaction with the standardized instruments. In the third section of this volume[1] an assessment procedure for language arts is described.

---

[1] Assessing the writing of elementary school children: The development of a procedure and preliminary findings.

The CTBS, however, was selected in 1969 as the outcome measure for academic skills in reading and arithmetic and for study skills. The findings reported here, though incomplete, do not suggest the superiority of Follow Through children that had been expected. In general, Follow Through children do as well as the controls, but they do not do significantly better. The preliminary findings using the High/Scope Foundation's language arts assessment procedure are encouraging and are consistent with the philosophy that an appropriate instrument can demonstrate the changes in child ability that are a product of the Cognitively Oriented Curriculum.

Conclusion

This report of the High/Scope Foundation evaluation efforts in Follow Through has focused on the Stanford-Binet and the CTBS achievement test as measures of program outcomes. There are many patterns of findings that indicate the overall success of the program, but the results are mixed and clear, consistent findings have not emerged. Two important considerations should be kept in mind as these findings are interpreted. First, the sponsor's Follow Through evaluation is longitudinal and in that perspective is not complete. In five of the centers there is only one Wave that has been in the program more than two years, and four centers have not yet "graduated" a third grade class. Without the complete longitudinal data and the necessary replications, firm conclusions cannot be made. The second consideration pertains to the measures themselves. As the scope of this year-end evaluation report indicates, these standard outcome measures are just one component in a multifaceted evaluation effort. Other outcome measures are involved (in language arts). In addition, measures of the educational process and formative evaluation procedures are indicators of overall program success. In the final analysis, the success of a complex educational program must be judged by a complex set of indicators. Volumes II and III of this report present the range of sponsor evaluation activities conducted during 1972-73 and demonstrate the variety of ways in which the High/Scope Foundation's Follow Through program produces valuable changes in children's lives.

SECTION 2

THE IMPACT OF FOLLOW THROUGH AT THE LOCAL LEVEL: PROGRAM CASE STUDIES AND THE ANALYSIS OF SUPPLEMENTARY DATA

September, 1973

Prepared by

Kathryn Suter
Christine Hill
Lynn Spencer
Ruth Grochowski
Grace Hsu
Lynne Seifert
Clay Shouse

High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

The research reported herein was performed pursuant to Grant No. OEG-0-70-4919 with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Point of views and opinions stated do not, therefore, necessarily represent official Office of Education opinion or policy.

Acknowledgments

Many people have contributed time and effort at various stages in the preparation of the site reports. All of the project directors, site personnel and principals at both Follow Through and non-Follow Through schools were extremely cooperative in providing any information they could under the constraints of the project. High/Scope coordinators and field consultants Eric Chapman, Donna McClelland, John Nowosad, Victor Milner, Roger Rugg and Dennis Vigil provided valuable information based on firsthand experience and gave useful feedback on earlier drafts of the reports.

Dennis Deloria and John Love provided consultation at various stages during the data collection, analysis and writing. Fay Savage and Robert Hanvey wrote the computer programs used in the transformation of the achievement data and assisted with the analysis. The large quantities of data were processed by Barb Bruemmer, Kim Calvin, Helen Kiddon and Nancy Naylor. Jana von Fange, Lynne Dermody and Barbara Kelley typed the tables and text.

INTRODUCTION

The High/Scope Foundation has conducted research on the Cognitively Oriented Curriculum since Follow Through began in the fall of 1968. The purpose of this evaluation effort has been to learn more about the strengths and weaknesses of the curriculum when implemented in different communities, providing additional information to High/Scope curriculum developers as they continued to improve the curriculum model. A wide variety of data have been collected, as other sections of this report demonstrate. In addition to these data collected by the sponsor, it seemed desirable to supplement this evaluation by obtaining data that already exist at the Follow Through sites. A preliminary attempt was made during 1971-72 when "case studies" were written for four Follow Through programs. These case studies were "preliminary" largely in the sense that there had not been the resources available for the systematic analysis of extensive "hard" data, such as achievement test scores. With supplementary funding from the Office of Education in the spring of 1973, such analyses became possible and work began on the reports presented here.

These individual site reports draw together information from local program personnel, school records, school personnel and parents. The intent of this compilation of information is to present the broader context in which Follow Through implementation occurs. When each report is complete, it provides an analysis of the program modifications that occur as the Cognitively Oriented Curriculum is implemented in a variety of different locations and an analysis of the effects of the program in several areas. Increasing the breadth of the program evaluation effort has been partly in response to the concerns of the local programs. This concern was expressed at a workshop in Ypsilanti in December, 1972. The participants (including project directors, curriculum assistants, administrators and representatives of parent groups) approved the following statement on evaluation:

> The evaluation procedures employed in the national evaluation of Follow Through are inadequate in assessing the comprehensive nature of the program. The impact on the total education environment must be determined. Academic growth alone is not a measure of the success of the program. The child's academic growth, cognitive growth, and affective development have reciprocal relationships on one another and on the improvement of

> his life chances. We must therefore more carefully evaluate his total educational growth rather than one narrow facet of it.

The workshop participants then listed several facets that they felt were being neglected. These included the provision of ancillary services, opportunities for staff development and career advancement, parent involvement (in the classroom, in the community and in policy-making), and the influence of the program on other grade levels, on non-Follow Through programs and on the community.

The site reports presented here represent the first attempt to incorporate a wide variety of evaluative information into single integrated reports describing Follow Through centers and their impact.[1] Each report begins with a description of the site and a brief historical sketch of the center's operations. The ancillary services provided by Follow Through (e.g., health, nutrition and social and psychological services) are then described, followed by a section on the instructional component which discusses such things as the pupil-teacher ratio, teacher turnover, classroom environment, room arrangement and field trips. A section entitled "effects on the child" describes the results of analyses of outcome measures, including attendance, retention rates and achievement testing. Other sections of the reports present information on parent involvement, staff development and the influences of Follow Through on the school and the community. Each report also contains a section in which an attempt is made to determine the comparability of the Follow Through schools and the schools from which comparison data were obtained.

Problems in Data Analysis

Since the analysis of data for this project was highly complex, it seems desirable to explain some of the difficulties and to describe the procedures followed for this report. Any evaluation of such a large-scale educational and social intervention as Project Follow Through is bound to encounter difficulties unless extremely well-planned from the project's inception. This evaluation was no exception. Because the evaluation was limited to existing data and because it was planned up to five years after the implementation of the curriculum at some of the Follow Through sites, the investigators had no control over what records were kept or in what form they were kept. Many school systems have not kept systematic records of such things as the number of children retained in grades or placed in special education classes, the number of aides and/or parents employed in the classroom, or teacher turnover rates. Even fewer have kept track of staff participation in out-of-school, work-related activities or the number of parent visits and the number of volunteers in the classroom. And in many cases only summary statistics of achievement test results have been kept as permanent records.

---

[1] Because of a delay in funding and the complexities of data processing and analysis, only five of the site reports could be completed in time for inclusion here. The remaining reports will be completed during the coming year.

These problems were greatly compounded by the timing of funding. Although data collection was scheduled to begin in January, funding was delayed until the end of May. Within two weeks, seven of the ten school systems had closed and within a month, all ten had closed. Thus, the time available for data collection and analysis was reduced from six months when schools were in session to a three-month period during which schools were closed for the summer. School principals, teachers, counsellors, and secretaries were all on vacations, leaving few people to provide access to the necessary records or to provide clarification of those records that were available. No records could be obtained from some schools so only data already available in the local Follow Through office could be used for evaluating those sites. When project directors felt they could provide reasonable estimates of unavailable data they did so, but only at the risk of creating inaccuracies in the report. Thus, the closing of school handicapped both the local site personnel and the Foundation research staff in their acquisition and analysis of existing data. The difficulties were even greater when dealing with non-Follow Through schools unfamiliar with High/Scope Foundation.

Time constraints created additional problems. Because school systems had to be contacted immediately to begin data collection, there was no time to devise or send standardized record forms. Local personnel interpreted requests for information differently and data were received in a variety of forms, creating additional problems in data processing and making across-site comparisons extremely difficult. Local personnel did not have time to ask their questions about what data were needed and much incomplete and unusable data were sent (e.g., Ns were not included with percentages, test records from both Follow Through and non-Follow Through classes were mixed together and not marked). Normally, this would cause delays but not prove insurmountable because records could be rechecked for the missing information. However, because schools were already closed, this was often not possible. Moreover, there was not time for a High/Scope staff member to visit the sites which had incomplete data.

The data analysis was further complicated by the post hoc nature of the data collection. Each school had its own idiosyncratic testing pattern. Often the same grades were given different tests in different years or were given the same tests at different times of the year. While there was usually some consistency within schools in the same district, even this was not always the case. Thus, much data could not be used because there were no comparable data from any of the possible comparison groups. More data had to be discarded due to highly disproportionate Ns in Follow Through, non-Follow Through and pre-Follow Through groups. Where necessary, a random sample of the larger group of scores was selected in order to equalize Ns.

An additional data analysis problem arose from the fact that many achievement test records had been kept only in terms of grade equivalents and percentile ranks. This practice necessitated transformation of the data collected into a form more suitable for statistical analysis such as raw scores or scaled scores and added a time-consuming step to the analysis of achievement test results. (These transformations were done conservatively. If a range of raw scores translated into one grade equivalent score, the child was assigned the median of the range or the lowest whole number raw score closest to the median.) Further compounding the problem was the fact that achievement test records often lacked information on the norms, level, or form of test given--all necessary information for transformation of scores from grade equivalents and percentiles. As with other incomplete data, it was often impossible to regain access to the original records.

Several other problems related to the nature of these data affect the interpretation of the results of this evaluation. Most of these factors have a tendency to obscure the differences between Follow Through and non-Follow Through or pre-Follow Through children.

First of all, achievement test scores, attendance rates, and other records were sent by classroom with no indication of which children had been in Follow Through for the entire program. For example, some children were labeled "Follow Through" in a third grade comparison between Follow Through and non-Follow Through classrooms. Although some of these third graders had Follow Through experience from the beginning of their school careers, many others had entered a Follow Through classroom at later points in time and some children had as little as one or even a half year's experience in the program. Thus, the latter children's performances will not accurately reflect program effectiveness. The Riverton-St.Stephen's report illustrates this problem. These variations are also a problem in older classes from sites where the program was implemented in several grades the first year so that whole classes of children began their Follow Through experience with second or third grade. When this variation represents a characteristic of entire centers, however, the maximum length of time a child can have participated in the Follow Through program is known and can be taken into account in the analyses. If discrepancies are noted between results based on local achievement data and those collected and analyzed by the High/Scope Foundation as part of the sponsor outcome evaluation, length of time in Follow Through may be a factor. In High/Scope's own data collection children are selected who have been in the program the longest.

A second problem was the identification of an adequate control group for each site. In some sites (such as Missouri and Trinidad) the only control children available were those in the non-Follow Through classrooms at the Follow Through schools. These children often came from families with higher income levels than the Follow Through children. Moreover, in many schools the Follow Through teachers have encouraged other teachers in the school district to adopt methods from the Cognitively Oriented Curriculum and to the extent that they have been successful, differences between Follow Through and non-Follow Through classes have been lessened.

Even where well-matched control schools could be found, comparability problems arose when the Follow Through schools contained some non-Follow Through classes. While the entire school populations may have been well-matched overall, the subset of Follow Through children at the Follow Through school were not well-matched to the entire set of children at the control school; the only valid comparison would be with low income children from the control school but these children could not be identified in the records received.

PS 007105

Similar problems arose for comparisons between Follow Through and pre-Follow Through children in mixed schools. Once again, the pre-Follow Through records included both low income and non-guideline children, while the Follow Through records included only low income children. If comparisons were made between the pre-Follow Through population and the school population *after* the project's implementation, effects of the Follow Through program would tend to be obscured by the inclusion of nonguideline children whose educational experience remained the same (i.e., non-Follow Through) after the Follow Through program was implemented.

These control problems were further compounded by the prior existence of parent-implemented Follow Through programs at some sites (e.g., Trinidad and Greeley). Thus, local site personnel sometimes included children with an intervention experience quite different from the Cognitively Oriented

Curriculum as part of the Follow Through data, and at other times, as part of the pre-Follow Through data. Their inclusion in either group tends to obscure the effects of the Cognitively Oriented Curriculum.

A further consideration in the interpretation of the results is the fact that most children in the higher grades experienced the Follow Through program as it was first being implemented. When comparisons involving these children fail to show program effects, it is not known whether this is due to the nature of the program or to poor implementation of the program during the initial phases. This can be determined only when longitudinal data become available for several cohorts.

Despite the many problems mentioned above, some data were collected from all ten Cognitively Oriented Curriculum sites. Reports are complete for those sites which sent most of their data during June and early July and for those which sent very little data.

While some of the problems encountered in the current evaluation cannot be easily solved, many can be greatly ameliorated with more time and advanced planning. Some of the procedures that can be followed as these reports are updated during the coming year are:

- School systems can be notified at the beginning of the school year that certain records should be kept;
- Standardized record forms can be prepared to assure more complete and consistent data across sites;
- More adequate control groups can be identified at non-Follow Through schools;
- Children with a complete Follow Through school experience can be identified within the Follow Through classrooms.

LEFLORE COUNTY

Leflore County, Mississippi is located in the rural Mississippi Delta and has a school population of 5,347 children of which 90% are black. The county's population centers are Greenwood (not included in the school district), Money, Morgan City, Minter City, and Schlater. The Leflore County school district was selected as a site for a Follow Through project in 1968; that same year High/Scope Educational Research Foundation was selected as the district's Follow Through model sponsor. The children in the Follow Through program attended the T.Y. Fleming School, Sam Balken School, Sunnyside School, Wilkes School, Amanda Elzy School, and R.B. Schlater School. These six schools cover 620 square miles in the school district.

The Follow Through project started in 1968 with eight first grade classes in five schools, and eight second grade classes were added the following year. Since 1970-71, the program has been implemented in six schools in grades 1-3. Class sizes range from 19 to 30 students.

All children in the Follow Through program come from low income families. Middle class children in the county attend public or private schools in the city of Greenwood. Most of the low income children have grown up on cotton plantations where their parents work as farm laborers. About 94% of the Follow Through children are black and the remainder are white. Of the schools participating in Follow Through, Sunnyside has the largest proportion of white, low income children.

Comparability of Follow Through and Control Children

Of the schools in the Leflore County system, Rogers School was judged by the local project staff to be most similar to the Follow Through schools. No special programs operate at Rogers School and students are comparable in terms of ethnic backgrounds and parental occupations, educations, and incomes. Thus, non-Follow Through data in this report come from Rogers School and from non-Follow Through classes at Amanda Elzy, one of the Follow Through schools.

Some first grade test data were available from the fall of 1971 for assessing comparability of Follow Through and control children. Since there is no kindergarten in the Leflore County school system, for most children these scores represent their first exposure to academic activities. Table 1-1 shows the mean scores of Follow Through children on the Metropolitan Readiness Test (MRT) and also the scores of a limited number of non-Follow Through children. Note that with only one exception, the mean scores of the first graders test fall below

Table 1-1

Leflore County
Follow Through and Non-Follow Through
First Grade Mean MRT Scores by Classroom, Fall 1971

	FOLLOW THROUGH				NON-FOLLOW THROUGH			
School	Mean	SD	Percentile Rank	N	Mean	SD	Percentile Rank	N
Elzy	64		69	25	50		40	33
					27		9	29
Fleming	47		35	39				
Schlater	46		33	47				
Wilkes	40		23	30				
Balkin	36		17	46				
TOTAL	45	16.52	31	187	39	16.12	22	62

$t = 2.54$; $p < .05$; df* = 113

*Adjusted for unequal N's

the 50th percentile in the national distribution of scores. The mean scores of Follow Through children range from 36 to 64. The mean score of all Follow Through classes is 45 which signifies average readiness for first grade work according to the publisher of the test. The mean of the non-Follow Through classes in Elzy School is 39, which reflects below average readiness for first grade work. The results of a t test between the Follow Through and non-Follow Through groups, with degrees of freedom adjusted for the unequal Ns, showed a significant difference between them as they began their schooling. A striking difference in mean scores can also be noted in Table 1-1 between the two non-Follow Through Classes in Elzy School.

While these differences are significant, the implications of these differences are unclear. Most of the Follow Through and non-Follow Through comparisons made in this report (including the California Achievement Test Comparisons) are based on a control group consisting of non-Follow Through classes at both Elzy and Rogers schools. In fact, the data from the non-Follow Through children at Elzy School comprise less than half of the total control group data. Also, scores from one grade from one year are not comprehensive enough to confidently judge initial differences between Follow Through and non-Follow Through children for the entire five-year Follow Through/non-Follow Through comparison.

Essentially then, the MRT data show that there was a significant difference between Follow Through and control samples prior to the implementation of the Follow Through program. However, since it is likely that this difference is based on an unrepresentative sample of control children, this finding remains confounded.

An additional problem in the use of non-Follow Through students at Elzy School as a control group is the dispersion of Follow Through curriculum techniques, which would tend to bias results in the opposite direction from the school readiness differences discussed above. Because Follow Through teachers make an effort to explain their methods to other teachers in the system, non-Follow Through students have been exposed to selected aspects of the Cognitively Oriented Curriculum, making them less adequate for control purposes.

Ancillary Services

The Leflore County Follow Through program provides a comprehensive health services program for its children and a detailed medical record is kept for each child throughout his involvement with the project. Children entering Follow Through receive complete physical and dental examinations, including all necessary tests, followup treatments and innoculations.

Referrals are also made to local social service agencies when appropriate. As a result of the health service program, 149 Follow Through children received dental care, 45 received eye examinations and were fitted with glasses when necessary, and three were treated by a physician.

In addition, the Follow Through nurse sets aside a major portion of her time during the school year to discuss health issues with Policy Advisory Committee (PAC) members and parents. During these discussions the nurse explains emergency first aid procedures, home health care, and safety guidelines. Health awareness information has also been highlighted by home visitor aides and the parent coordinator at several of the parent's monthly meetings.

In line with the above efforts, project staff devised a health education curriculum last year as an addition to the classroom educational model. The purpose of the health curriculum was to further both the students' and parents' awareness of the importance of health care by integrating health care procedures into the classroom daily routine.

Another part of the Follow Through health care program is the provision of a hot lunch and morning and afternoon snacks for all Follow Through children. For the majority of the children, this is 75 to 90% of their daily food intake. A Food Service Supervisor works directly with all lunchroom managers to help plan balanced meals. In addition, the supervisor donates a portion of her time to speak to the PAC group concerning home nutritional standards. Nutritional information is also provided to Follow Through parents. Included in a weekly menu brought home by the child are recipes which utilize inexpensive, readily available foods for family meal preparation. Along with this, the parent coordinator and home visitor aides encourage parents to use the "Parent Packet Booklet" which contains information on food preparation and consumer buying. In addition, Follow Through children are encouraged to learn nutritional concepts by analyzing the composition of daily meals, by discussing printed nutritional concept materials and by sampling new foods and describing how they taste.

A speech development program has been set up on a weekly basis in all first grade classes and some second grade classes. During the past year, 319 children were screened for speech defects and 56 have received speech therapy.

The Leflore County School System has employed a qualified school psychologist for the past two years. The psychologist serves all Follow Through children who need psychological services. Psychological referrals are made by teachers to a local school survey team which includes the school principal, guidance counselor, attendance counselor, nurse's aide, and the classroom teacher. The team then refers children in need of treatment to the psychologist. Eighty-eight children in Follow Through classrooms were referred for psychological evaluations and/or counseling last year. Of the nine children who were referred to Special Education Result Testing, two have been placed in Educable Mentally Retarded classes.

The social services program is closely associated with the parent involvement component of the Follow Through program. The PCA Parent Involvement Committee (with the help of the parent coordinator and home visitor aides) works closely with the Health Department, the Welfare Department, the Food Stamp Distributor, and the Leflore County Hospital on followup and referral cases. All local and federal social services are available to Follow Through low income children and their families.

Instructional Component

In 1968-69, each Follow Through class in Leflore County was staffed by one full time and one part time teacher and six classroom aides were shared among the eight first grade classes. The following year the staff model was changed to 24 teachers and 12 classroom aides for 13 first and second grade classes (see Table 1-2). The staffing pattern of two curriculum assistants (CAs), one release teacher, one home visit supervisor, six home visiting aides, and one nurse for the entire program, plus two certified teachers and one classroom aide in each of the 18 classes in six schools has remained unchanged since 1970.

Tables 1-2 and 1-3 illustrate the staffing patterns typical of Follow Through and non-Follow Through classrooms in Leflore County schools. Note the consistently lower adult-child ratio in Follow Through classrooms that makes possible the small group instruction typical of these rooms. Note also that Follow Through provides home visiting aides to establish and maintain contact with parents to increase their interest in their children's education. Except for the first two years of operation, each Follow Trhough classroom has had two certified teachers assigned to it, compared to the single teacher assigned to each non-Follow Through classroom. Classroom aides must assist in two or three non-Follow Through classrooms, while in Follow Through every classroom has its own regularly assigned classroom aide. Parent aides in the Follow Through program are individuals who regularly contribute their time and presence to the program activities. Of the 18 classroom aides and six home visiting aides on the staff, 95% are parents of children who are or have been in the program.

Table 1-2

Leflore County
Follow Through Staffing Patterns

Year	Grades	Classrooms	No. Teachers	No. Aides	Parent Aides	Enrollment	Adult-Pupil Ratio
1968-69	1	8	12	Classroom 6 Home Visit 6 TOTAL 12	6	200	1:8
1969-70	1-2	13	24	Classroom 12 Home Visit 6 TOTAL 18	10	329	1:8
1970-71	1-2-3	18	36	Classroom 18 Home Visit 6 TOTAL 24	12	450	1:8
1971-72	1-2-3	18	36	Classroom 18 Home Visit 6 TOTAL 24	12	464	1:8
1972-73	1-2-3	18	36	Classroom 18 Home Visit 6 TOTAL 24	11	476	1:8

Table 1-3

Leflore County
Non-Follow Through Staffing Patterns in Elzy and Rogers Schools

Year	Grades	No. Classrooms	No. Teachers	No. Aides	Parent Aides	Enrollment	Adult-Pupil Ratio
1968-69	1	8	8	4	*	235	1:20
1969-70	1-2	15	15	4	*	292	1:15
1970-71	1-2-3	16	16	4	*	527	1:25
1971-72	1-2-3	16	16	5	*	541	1:23
1972-73	1-2-3	17	17	6	*	531	1:21

*Data not recorded

In contrast to the non-Follow Through classes, the consistently low adult-pupil ratio in the Follow Through classes provides a small group structure that encourages interactions between the teacher and the pupil and between the pupil and his peers. Also, the open framework curriculum and unstructured staffing of the Follow Through program in Leflore County provides an environment which is highly conducive to the development of maximum potential for the children and the teaching teams. Both pupils and team members function in the classroom as individuals with freedom to explore and to grow. Children are encouraged to use the wealth of audio-visual materials and instructional supplies which are not usually available in non-Follow Through classrooms. Every effort is made to expand their range of experience through numerous field trips, birthday parties, music, art and socio-dramatic presentations.

Table 1-4 shows that in the years for which comparison data are available the rate of absenteeism among non-Follow Through teachers has been consistently at least twice as high as the rate for Follow Through teachers. As shown in Table 1-5, job turnover for both groups of teachers has consistently favored Follow Through and with the exception of the 1970-71 school year has been low. That year's turnover for both groups was due to the redistricting that took place in the area to improve the racial balance of students and staff. Teachers and students were both reassigned and allowed to transfer to other schools. At that time, many white children from Leflore County schools transferred to Sunnyside School, which resulted in an approximately 50% enrollment of white children in that school. Teacher turnover in Leflore County is generally low. The salary scale does not attract many teachers from outside the area and the positions that are available are filled by settled residents. In the social context of a nonmobile professional staff job turnover might not accurately reflect the degree of job satisfaction. However, it is notable that there is a waiting list to teach in Follow Through.

The amount of after-school hours spent by the teachers provides an additional indicator of the involvement of the staff in their program. Table 1-6 shows the estimated time spent in after-hours, work-related activities by Follow Through and non-Follow Through teachers. Estimates were made by listing specific activities held or attended and multiplying by the number of teachers participating. It can be seen that Follow Through teachers have spent a greater amount of time in out-of-school activities than non-Follow Through teachers, although certain aspects of the program such as home visits and PAC meetings automatically provide opportunities for out-of-school involvement. It should be noted that other aspects of involvement such as preparations for special programs and participation in scouting activities might be particularly difficult to estimate accurately for non-Follow Through teachers. The types of activities covered in estimates of staff involvement include:

Table 1-4

Leflore County
Parent Involvement in Follow Through and Non-Follow Through Classrooms

Year	No. Volunteers		No. Volunteer Hours		No. Parent Visits	
	Follow Through	Non-Follow Through	Follow Through	Non-Follow Through	Follow Through	Non-Follow Through
1968-69	80*	none	700*	none	320*	150*
1969-70	120*	none	950*	none	500*	175*
1970-71	160*	none	3,473*	none	640*	180*
1971-72	180	none	7,392	none	730	170*
1972-73	220	none	15,483	none	900	285*

*Estimated hours

Table 1-5

Leflore County
Teacher Absences in Follow Through and Non-Follow Through Classrooms

Year	FOLLOW THROUGH			NON-FOLLOW THROUGH		
	No. Teachers	No. Days Absent	Mean No. Days Absent	No. Teachers	No. Days Absent	Mean No. Days Absent
1968-69	12	*		8	*	
1969-70	24	17	.71	15	*	
1970-71	36	37	1.03	17	98	5.76
1971-72	36	35	.97	16	94	5.88
1972-73	36	58	1.61	17	73	4.29

*Not Available

Table 1-6

Leflore County
Teacher Turnover in Follow Through and in Two Non-Follow Through Schools

		FOLLOW THROUGH			NON-FOLLOW THROUGH		
Year	Grades	Number Teachers	Number Leaving	Percent Leaving	Number Teachers	Number Leaving	Percent Leaving
1968-69	1	12	0	0.0	8	1	1.25
1969-70	1-2	24	0	0.0	15	1	6.6
1970-71	1-2-3	36	6	16.6	16	7	43.7
1971-72	1-2-3	36	0	0.0	16	2	1.25
1972-73	1-2-3	36	3	8.3	17	3	17.6

- making costumes for special programs;
- Leflore County Teachers' Association activities;
- giving demonstrations in handicrafts and art;
- fund-raising projects;
- attending PAC meetings;
- acting as Den Mothers and helpers in Boy Scouts and Brownie Troops;
- home visits with parents;
- involvement in community action groups.

Program involvement is also higher among Follow Through parents. As can be seen in Table 1-7, parents of Follow Through children, who are actively encouraged to observe and participate in their children's education, visit their children's classrooms two to three times more often than non-Follow Through parents. Because the program provides methods for parent participation in classroom activities, Follow Through parents volunteer their time to the program; this is in contrast to the absolute lack of parent participation in non-Follow Through classrooms.

Effects on the Child

Attendance, retention and special education. One indication of the reception of the Follow Through program is the higher average attendance rates of Follow Through children when compared to non-Follow Through children. Table 1-8 shows that the attendance rates for Follow Through children have been consistently higher than rates for non-Follow Through children. Most children in this rural school system are transported to school on buses.

No children have been retained in either Follow Through or non-Follow Through classrooms since the inception of the Follow Through program. Table 1-9 lists the number of children from each group who were assigned to special education classes. No Follow Through children were enrolled in special education classes from 1968 to 1972. In the 1972-73 school year only two Follow Through children were assigned to special education as compared to 33 non-Follow Through children. The Follow Through instructional model at least partially accounts for the extremely low referral rate from Follow Through classes because of the increased numbers of adults in the classroom who provide small group and individualized instruction to students, presenting them with materials and tasks more nearly matched with their individual levels of ability.

Table 1-7

Leflore County
Estimated Hours of Staff Involvement in Extra Activities, Meetings, After-Hours Work, and Extended Days' Activities

Year	Follow Through	Non-Follow Through
1968-69	648	400
1969-70	885	600
1970-71	12,130	700
1971-72	14,150	750
1972-73	16,250	850

Table 1-8

Leflore County
Attendance Rates in Follow Through and Non-Follow Through Classrooms

		FOLLOW THROUGH		NON-FOLLOW THROUGH	
Year	Grades	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance
1968-69	1	200	88.8	235	85.6
1969-70	1-2	329	91.0	393	89.7
1970-71	1-2-3	450	93.8	830	91.8
1971-72	1-2-3	464	95.4	710	92.4
1972-73	1-2-3	476	94.8	531	91.7

Table 1-9

Leflore County
Number of Follow Through and Non-Follow Through Children in Special Education Classes

		FOLLOW THROUGH			NON-FOLLOW THROUGH		
Year	Grades	Number Enrolled	Number in Special Ed.	Percent in Special Ed.	Number Enrolled	Number in Special Ed.	Percent in Special Ed.
1968-69	1	200	0	0.0	448	0	0.0
1969-70	1-2	329	0	0.0	794	19	2.4
1970-71	1-2-3	450	0	0.0	830	26	3.1
1971-72	1-2-3	464	0	0.0	710	53	7.5
1972-73	1-2-3	476	2	0.4	531	33	6.2

Achievement test comparisons. In addition to the evaluations conducted by the Stanford Research Institute and by the model sponsor, evaluation of the Follow Through program is conducted by the Leflore County schools as part of the general systematic program of pupil evaluation. The Leflore County schools base their evaluation on the results of the California Achievement Test (CAT), 1970 edition. In addition, the Metropolitan Readiness Test (MRT) is given to first graders.

The CAT was designed to measure student performance in the basic curricular areas of reading, mathematics, and language. The Reading test includes vocabulary items using visual, spoken, and written stimuli, sound and letter discrimination items, and multiple choice items on the content of test included in the test. The Mathematics test includes items on computation, on the use of mathematical concepts, and on word-problem solving in which the process to be used must be decided and the computation performed by the student. The Language test includes items on comprehension of spoken material, capitalization, punctuation, grammar, and spelling. The MRT attempts to evaluate a child's readiness for learning by assessing linguistic attainment and aptitudes, visual and auditory perception, and ability to follow directions and pay attention to group work. This test is usually given at the end of kindergarten or the beginning of first grade.

MRT data. The MRT data from entering first graders in fall, 1971 have been discussed in connection with the comparability of Follow Through and control children. Although there was a significant difference reported between the Follow Through and control group, there was doubt as to the representativeness of the control group subsample.

CAT data. CAT scores were reported for Follow Through and non-Follow Through first through fourth graders tested in spring, 1972, and for Follow Through and non-Follow Through first through fifth graders tested in spring, 1973. The Follow Through scores represent a random sampling of children from all six Follow Through schools; the non-Follow Through scores represent a random sampling of the children in non-Follow Through classes at Elzy School and Rogers School. Random samples were used to equalize Ns for data analysis purposes; where Ns were small, all available scores were used. All Follow Through first through third graders had experienced only Follow Through classrooms. The Follow Through fourth and fifth graders experienced Follow Through classrooms in grades one through three, and then non-Follow Through classrooms for grades four and five.

Two-way analyses of variance were done for the 1972 and 1973 testings, comparing Follow Through and non-Follow Through scores by grade. Scheffe tests were done to compare Follow Through and non-Follow Through scores on all of the subtests given in 1972, and for all total scores, and fourth and fifth grade subtest scores for 1973.

The 1972 mean scores showed Follow Through children generally performing better than non-Follow Through children in grades one through three, and non-Follow Through children scoring higher in fourth grade. The only subtest which showed a significant difference between Follow Through and non-Follow Through scores was the Spelling subtest, in which the Follow Through children scored significantly better than the non-Follow Through children (The F-ratios reported below each subtest in Tables 1-10 and 1-12 represent the overall differences between Follow Through and non-Follow Through children.).

The results of Scheffe tests done to compare Follow Through and non-Follow Through scores on each subtest at each grade level can be seen in Table 1-11. Follow Through first graders scored higher than non-Follow Through first graders on all subtests except Reading, although none of these differences were significant. The second grade Follow Through children performed better on all of the subtests, and these differences were significant for each set of subtest scores except Reading. Follow Through third graders again had higher mean scores on all subtests except Language, although none of these differences were significant. The non-Follow Through fourth graders scored higher than the Follow Through children on the Reading and Math subtests, virtually equivalent on the Language subtest, and Follow Through children scored higher on the Spelling subtest. However, none of these fourth grade differences were significant.

Figure 1-1 shows the plot of total battery mean scores for all grades. It can be seen that Follow Through children tended to perform better than non-Follow Through children through the third grade, and then on the fourth grade testing fell behind the non-Follow Through children. This decrease in Follow Through fourth grade performance is very likely due to the change from Follow Through classes to non-Follow Through classes for the fourth grade. This major change in the learning environment could very possibly cause adjustment problems for children whose entire educational experience had been in cognitively oriented classrooms. This fourth grade year would very likely be a critical year in this adjustment, and it is important to see what happens to these children in the fifth grade.

The mean scores for the subtests given to grades one through five in 1973 can be seen in Table 1-12. The scores suggest a pattern similar to the 1972 scores, in that Follow Through children score higher than non-Follow Through children in grades one through three, and non-Follow Through children perform better in the fourth grade. The subtest scores available for fifth graders show the Follow Through students (who were fourth graders in the 1972 testing) now scoring higher than the non-Follow Through students. The differences between Follow Through and non-Follow Through scores on all subtests except Spelling were significant.

Table 1-10

Leflore County
Comparison of Follow Through and Non-Follow Through Scores on MRT (Fall, 1971) with CAT (Spring, 1972)[1]

	MRT (Fall, 1971)		CAT (Spring, 1972)	
	N	Mean Score	N	Mean Score
Follow Through	63	50.25	62	50.02
Non-Follow Through	62	49.75	66	49.98

$F_{interaction} = 3.250$; df = 1, 249; p = N.S.

$F_{main} = 4.737$; df = 1, 249; $p < .05$

---

[1] Both test scores adjusted to Z-scores with means of 50.

Table 1-11

Leflore County
1972 CAT Follow Through and Non-Follow Through Comparisons

Grade	READING				MATH				LANGUAGE				SPELLING				TOTAL			
	F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.	
	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score
1	74	270.0	70	281.5	74	250.1	67	241.1	75	278.3	66	273.8	74	303.5	66	287.4	73	237.8	60	239.6
2	73	311.5	76	308.1	74	276.7	74	257.5	68	319.3	54	285.0	70	314.8	61	274.5	65	279.8	49	263.2
3	74	328.4	49	313.5	74	295.6	49	288.6	73	330.8	46	338.4	73	343.1	46	327.4	72	292.9	45	288.5
4	75	329.9	40	343.3	74	290.7	40	305.0	73	350.6	40	350.0	73	361.5	40	356.9	72	295.9	40	303.5
	F = .125 df = 1, 523 p = N.S.				F = .133 df = 1, 518 p = N.S.				F = .121 df = 1, 487 p = N.S.				F = 10.902 df = 1, 495 p < .001				F = .514 df = 1, 468 p = N.S.			

Table 1-12

Leflore County
Pairwise Comparisons of Follow Through and Non-Follow Through 1972 CAT Scores

Grade	READING				MATH				LANGUAGE				SPELLING				TOTAL			
	Difference in mean Scores	F	df	p <	Difference in mean Scores	F	df	p <	Difference in mean Scores	F	df	p <	Difference in mean Scores	F	df	p <	Difference in mean Scores	F	df	p <
1	11.5	1.738	1, 523	N.S.	9.0	1.939	1, 518	N.S.	4.6	.237	1, 487	N.S.	16.1	2.290	1, 495	N.S.	1.8	.058	1, 468	N.S.
2	3.4	.157	1, 523	N.S.	19.2	9.166	1, 518	.01	34.3	11.554	1, 487	.01	40.3	13.398	1, 495	.01	16.6	4.935	1, 468	.05
3	14.9	2.367	1, 523	N.S.	7.0	.960	1, 518	N.S.	7.6	.533	1, 487	N.S.	15.7	1.793	1, 495	N.S.	4.4	.292	1, 468	N.S.
4	13.4	1.677	1, 523	N.S.	14.3	3.479	1 518	N.S.	.6	.002	1, 487	N.S.	21.16	.137	1, 495	N.S.	7.6	.805	1, 468	N.S.

Figure 1-1. 1972 CAT Total Battery Mean Scores
Grades 1 through 4, Leflore County

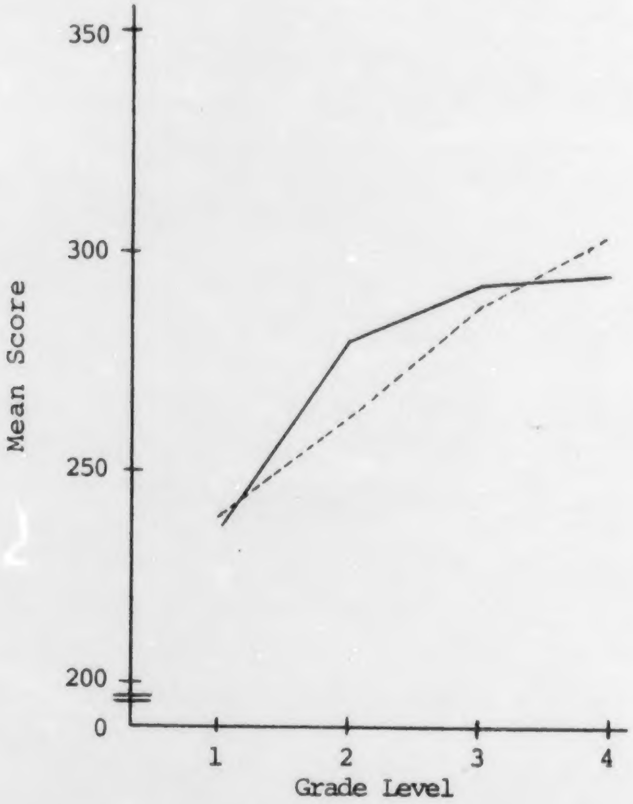
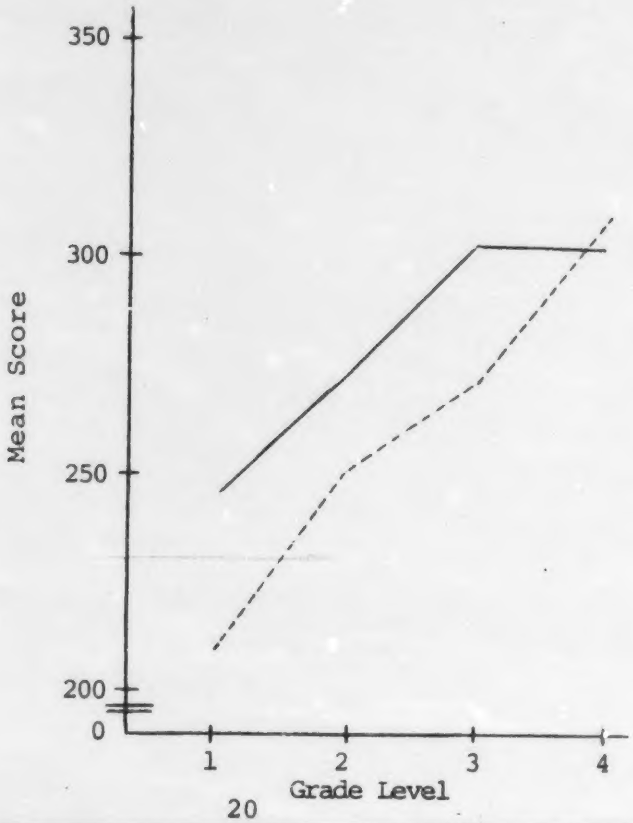


Figure 1-2. 1973 CAT Total Battery Mean Scores
Grades 1 through 4, Leflore County



Subtest comparisons at each grade level were not done for grades one through three because of the general large difference in Follow Through and non-Follow Through scores. Scheffe tests were done, however, for the total battery scores for each grade level, and for each fourth and fifth grade subtest. The results of these comparisons can be seen in Table 1-13. All of the total battery comparisons for grades one through three show Follow Through children performing significantly better than non-Follow Through children. The fourth grade results show higher mean scores on all subtests for the non-Follow Through children; however, none of these differences are significant. The available fifth grade results show Follow Through children again scoring higher than non-Follow Through children on the three subtests. The differences are significant on two of the three subtests.

Figure 1-1 shows the tendency for Follow Through children to score higher than non-Follow Through children while they are in the Follow Through program. The Follow Through children do not progress as rapidly as non-Follow Through children do in the fourth grade, a year of conceivably difficult transition, and the non-Follow Through scores are higher. By the end of fifth grade, however, the Follow Through children have apparently adjusted and are performing better than the non-Follow Through children again. The Follow Through program in Leflore County then, appears not only to have increased the development of the children's learning skills, but also to have made some lasting impact on the children's learning attitudes and/or capacities.

Parent Involvement

Parents of Follow Through students are encouraged to take an interest in their children's education, and the project provides means for them to do so. Follow Through parents receive home visitors who explain the goals of the program to them and show them ways to contribute to their children's education out of school. Other meetings with parents are held by project staff in order to report on the program's progress and plan its activities. The formal organization of the Policy Advisory Committee (PAC) provides parents with a vehicle for increased social contact with nonfamily members and an instrument through which to organize self-help activities such as food and clothing distribution. Thus, during the course of the project, Follow Through parents have developed organizational skills that are used to express their basic concern for their children's education. Because parents are welcome in Leflore County Follow Through classrooms, they can participate in and learn about the formal educational process. From these experiences parents develop an understanding of the school's goals and methods, enabling them to reach informed decisions about their children's progress and accomplishments.

Table 1-13

Leflore County
1973 CAT Follow Through and Non-Follow Through Comparisons

Grade	READING				MATH				LANGUAGE				SPELLING				TOTAL			
	F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.		F.T.		N-F.T.	
	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score	N	Mean Score
1	71		75	253.3	70	247.3	71	223.5	63	297.0	72	236.9	72	272.8	71	252.5	61	245.8	68	209.9
2	74	306.7	54	296.6	73	283.8	54	263.8	72	304.8	54	259.3	72	332.8	54	303.9	71	272.2	53	250.4
3	74	339.2	74	304.1	75	305.9	74	280.7	74	338.7	73	304.4	74	340.o	73	328.3	73	302.2	73	270.2
4	72	323.3	75	327.9	69	303.3	75	310.3	68	350.7	72	358.4	72	350.1	73	380.7	66	300.7	72	308.4
5	50	376.9	73	358.6	50	336.2	73	325.1	49	400.0	73	372.4	*	*	*	*	*	*	*	*
	F = 29.240 df = 1, 682 p < .001				F = 23.866 df = 1, 674 p < .001				F = 50.235 df = 1, 660 p < .001				F = 1.923 df = 1, 553 p = N.S.				F = 31.437 df = 1, 529 p < .001			

* Not **available**

Table 1-14

Leflore County
Pairwise Comparisons of Follow Through and Non-Follow Through 1973 CAT Scores
for Total Scores, Grades 1-4, and Subtest Scores, Grades 4 and 5

Grade	READING				MATH				LANGUAGE				SPELLING							
	Difference in Mean Scores	F	df	p <	Difference in Mean Scores	F	df	p <	Difference in Mean Scores	F	df	p <	Difference in Mean Scores	F	df	p <	Difference in Mean Scores	F	df	p <
1	*				*				*				*				35.9	23.321	1, 529	.001
2	*				*				*				*				21.8	8.116	1, 529	.001
3	*				*				*				*				32.0	21.033	1, 529	.001
4	4.6	.351	1, 682	N.S.	7.0	1.175	1, 674	N.S.	7.7	.508	1, 660	N.S.	30.6	8.148	1, 553	.001	7.7	1.489	1, 529	N.S.
5	18.3	4.482	1, 682	.05	11.1	2.439	1, 674	N.S.	27.6	6.695	1, 660	.001	**							

*Not computed

As mentioned earlier, these efforts to involve Follow Through parents in the educational process have resulted in more frequent parent visits to Follow Through classrooms and a wide range of volunteer activities. The 1972-73 Follow Through program evaluation report lists the following activities as examples of parent involvement:

- six week-long workshops for inservice training, four of which focused on topics suggested by parents such as sewing, nutrition, and home improvement;
- brunches held at each school to acquaint new parents with the program and to get them involved in the learning process of their children;
- transportation for children referred to outside agencies;
- sponsoring of Banquet and Awards Night for parents and teachers;
- provision of food, clothing, and other necessities to families in need;
- sending out monthly newsletters to parents;
- regular attendance at PAC meetings;
- sponsoring birthday parties for children;
- parents' rooms, located in each school (where space is found), where parents meet for various activities;
- family Fun Night held as a monthly social event for all members of the family;
- participation in preparing Follow Through proposal;
- assisting teachers with field trips;
- making things for teachers to use in the classroom;
- working closely with teachers, special service staff, and other school personnel;
- assisting school nurse during innoculation clinics, hearing tests, and vision screening tests;
- followup work of visiting homes and contacting proper agencies regarding problems.

Staff Development

Career advancement opportunities are available to Follow Through teachers and aides. Professionals attend college extension classes offered each semester (these courses are paid for by Title I funds) and teacher aides are encouraged to obtain General Equivalency Diplomas (GED) free of charge. Professional training and advanced degree work are offered at Mississippi Valley State College and Delta State College. According to the 1972-73 Follow Through program evaluation report, 92%, or 22 out of 24 low income parents, who have been employed as teacher aides and home visiting aides have either enrolled in the college or have completed GED and two aides who have completed college work are now employed as Follow Through teachers. Two teachers were promoted to curriculum assistants and one curriculum assistant was promoted to coordinator of a federal program.

In addition, the teachers and aides visited other Follow Through classrooms and attended sponsor-directed, district-directed or CA-directed workshops and mini-workshops held after school. On a less regular basis, the aides also attended special workshops conducted by State Department personnel. The classroom staff, parents and aides have benefited from the increased amount of in service training available through the Follow Through program. Materials and techniques have been introduced by the educational sponsor and formal classes have been available at local colleges and universities. This consolidation of professional skills has enabled Follow Through staff to disseminate information that they have acquired through training and practice to their colleagues who are not in the program. The Follow Through classrooms thus serve as a permanent onsite training location with the potential of affecting many more teachers and students than are in the program.

Influences of Follow Through on the Schools and Community

As has been pointed out, the Follow Through program has much potential for affecting teachers and pupils other than these in the Follow Through classrooms. Following is a summary of activities and contributions Follow Through has made to non-Follow Through classrooms, schools, and the community, as reported in the 1972-73 Follow Through program evaluation report:

- Language Experience Kits and other materials used by Follow Through classes are now used in non-Follow Through classes.

- Follow Through teaching techniques are now being used in non-Follow Through classes.

- A workshop for fourth grade teachers was conducted by Follow Through third grade teachers to facilitate the Follow Through third graders' transition into non-Follow Through classes.

- Non-Follow Through and Follow Through teachers discussed curriculum in general faculty meetings, therefore precipitating an increased professional awareness of the program and its effects.

- Non-Follow Through out-of-state teachers interested in the Follow Through program have visited the Leflore County site.

- Non-Follow Through personnel have attended Follow Through workshops.

- College students from Mississippi Valley State College have visited and observed Follow Through classrooms.

- Student teacher in Follow Through classrooms have become Follow Through teachers.

Site personnel have indicated in their 1972-73 Follow Through program evaluation report that Leflore County community agencies support the Follow Through project in a variety of ways. The local post office, fire department, police department, supermarkets, and radio and TV stations have helped with and/or publicized numerous Follow Through activities, and local civic clubs provided emergency clothing for needy families. Local newspapers have featured news items describing the Leflore County Follow Through program, while the local telephone company provided telephones to teach children correct telephone usage. Also, Follow Through staff have established a much-needed rapport with the local Head Start program and exchange ideas and materials. Following is a summary of contributions the Follow Through program has made to the community:

- provided educational opportunities for career advancement;

- provided medical and nutritional services to low income children;

- provided jobs in the community;

- provided seasonal decorations at various hospitals and homes for the aged;

- provided a framework for communication among parents, schools, and local businesses.

In the Spring of 1972, Leflore County Follow Through was given notice of the termination of its program. Reaction in the community and particularly among parents of Follow Through children was swift and forceful. The project was restored during the summer of 1972. Several letters written by Follow Through visitors, students, and parents are attached to this section to demonstrate the widespread interest and support that prevails for the Leflore County program.

Summary

The Follow Through program in Leflore County has had a widespread impact. Both those directly involved in the project and those cognizant of the project's activities have been affected by its various components. The ancillary services provided assure proper medical attention to the low income children in the program, and health maintenance principles are disseminated to both children and parents through several channels. Comparison of Follow Through and non-Follow Through children's test performances shows that Follow Through children score higher than non-Follow Through children consistently in grades one through three and significantly in grade five, their second year after leaving the project. Only in the fourth grade, when the children must make the transition from Follow Through to a non-Follow Through learning environment is this steady progress interrupted. Achievement test results suggest that the Follow Through program has not only improved the performance of children on learning skills while they are enrolled in the program but also has affected learning attitudes or capacities evidenced after their departure.

Adults have also been touched by the program. Its inservice training opportunities have served as the vehicle for a steady upgrading of job skills for professional and paraprofessional staff members. Its availability for observation has established it as a regional example of an alternative educational style for teachers in the area. Follow Through parents in Leflore County developed organizational skills and experience through their involvement with the PAC that served them well in the campaign to extend the program's funding, and can be used again for any purpose of concern to the parents of the area. In sum, the program has encouraged the development of skills and opened communication channels among parents, children, school staff and community representatives and thus will have long-term effects in Leflore County.

Henderson State College
Arkadelphia, Arkansas 71923

Box 2620

April 20, 1973

Miss Amanda Elzie
Assistant Superintendent
Leflore County Schools
Greenwood, MS 38930

Dear Miss Elzie:

I appreciate having had the opportunity to visit the Follow-Through Programs in your school system. I found many exciting things occurring. May I commend you, your classroom assistants, and elementary principals and other persons who are responsible for developing such exemplary programs.

I feel that my visit with you was most rewarding.

Sincerely,

James T. Wright

James T. Wright, Chairman
Elementary and Early
Childhood Education

pab

LAKESIDE PUBLIC SCHOOLS
Office of Superintendent
LAKE VILLAGE, ARKANSAS

4-17-73

Miss Amanda Elzy
Follow-Through Director
LeFlore Co. Schools
Greenwood, Mississippi

Dear Miss Elzy:

I would like to express my appreciation for the hospitality and consideration you gave the groups from Chicot County who had the privilege of visiting your Follow Through Program.

We were impressed with the over-all operation of your program. The High Scope Model seems to be well suited to your situation. It is evident from observing your teachers and staff that a lot of in-service training with your model sponsor has taken place.

The classrooms were well organized and it was obvious that learning was taking place. The learning centers were arranged to hold a child's interest and encourage him in many ways.

Thank you again for allowing us the opportunity to visit in your Follow-Through classrooms.

Sincerely yours,

Joyce L. Vaught

(Mrs.) Joyce L. Vaught
Coordinator of Federal Programs

By: Denise Lyman

BEST COPY AVAILABLE

Why I think Follow Through is a good program

I think that Follow-Through is a very good program. In this program we get a good hot breakfast and snacks everyday. We get free toothbrushes and toothpaste to brush our teeth everyday. We get our eyes test, and if we need eyeglasses, we get them free. We get gifts for Christmas, have birthday parties for children whose bithdates come in different months, free pencils, paper, and all kind of educational materials.

We have music once a week while our teachers and aid are planning.

The home visiting co-ordinator always see that we get clothing if we are in need for them.

March 10, 197
Greenwood, M

Mr. Senator:

I am a Parent of Chied in the Fallow-Through Program of leflow County. it is the best in Mississippi if you coued see how My Child and other are impro
Mr. Senator: I ~~[illegible]~~ feeal that you will use all the powder you how to sove Fallow Through. I am tha you in atvance.

Corcenced Paren
Mrs J. Davis

OKALOOSA COUNTY

Okaloosa County's white sand beaches and deep blue waters beckon thousands of tourists to the Florida panhandle and Fort Walton Beach. Motel after hotel after condominium line the Miracle Strip on Santa Rosa Island. Westward on the island and inland is Eglin Air Force Base, a major influence on the economy and population of the area. A small boat manufacturing company and the tourist-supported fishing industries also contribute to the economy of the area. The county's population of 80,000 is centered around Fort Walton Beach, a town that has grown from a population of 99 in 1940 to 25,000 today. The county population is 6.8% black. In the midst of Fort Walton Beach's shopping centers, banks, and schools is a poverty area half a mile square. On down U.S. 98 in Mary Esther is another cluster of substandard housing. These are predominantly black, low-income areas relatively unaffected by the tourism and affluence of a rapidly growing community. Follow Through primarily serves the children in these communities.

While the average educational level of county residents is two years of college, the average for parents of Follow Through children is at the sixth grade level. Many parents cannot read, and, if employed, engage in domestic work and unskilled labor. Housing is primarily substandard, but has been somewhat improved since 1972 when the Urban Renewal Program low rental units were completed in Fort Walton Beach. Homes are usually run and supported by mothers and heating, sewage, and skin disease are recurrent problems for them.

The three schools that house the Follow Through programs are located in white middle class areas. Children are bused from eight school zones to Fort Walton Beach, Mary Esther, and Oakland schools. While all three schools are relatively modern one-story brick buildings with covered walkways, Oakland's third grade classrooms are located in converted army barracks, as are the school board and project offices.

In 1968 Okaloosa County was selected as a site for a Follow Through project by HEW, and High/Scope Educational Research Foundation was selected as the county's Follow Through model sponsor. That year five first grade classes in three schools were monitored by the project director who also functioned as a curriculum assistant. In 1969-70 four first grades and four second grades were located in two schools and were monitored by two curriculum assistants (CAs) and the project director. Since 1971 three CAs have worked with the project director in training and supporting the classroom staff. In 1970 four Follow Through kindergarten classes and four third grades were added to the program. This distribution of four classes at each level (kindergarten through third grade) continued from fall 1970 through spring 1973. Thus, the Follow Through project presently operates in three schools, with two classes each of grades 1 through 3 at Oakland Heights and Mary Esther schools, and four kindergarten classes at Fort Walton Beach.

During Follow Through's first two years in Okaloosa County, classrooms were staffed by three adults--two teachers and one foster grandparent aide. In 1970-71 Follow Through began using aides who were, or had been, parents of Follow Through children and had completed their high school education. The aides work part-time in the classroom and spend the other half of their time visiting parents in their homes to inform and include them in the process of their child's education.* As aides received more education and teachers became more confident in implementing the program, a third stage of staffing evolved. In 1972-73, classrooms were staffed by one teacher, one paraprofessional who had completed at least two years of college, and one aide who had a high school diploma. The project staff will continue with this model in 1973-74, because they feel it provides for a variety of staff backgrounds to draw on in the classroom as well as an incentive to aides and paraprofessionals to continue their own educations.

Comparability of Follow Through and Control Children

The control (non-Follow Through) children are from the rural towns of Baker, Crestview, and Southside, located on the north side of the county close to the Alabama border. Although this is a low-income population, it differs from the Follow Through population in several important ways. The control children attend schools within their own communities and represent a cross-section of those communities, whereas the Follow Through children represent a selection of only the lowest income children within the eight school zones from which they are bused to Follow Through schools. Moreover, the control population is much more stable than the more transient Follow Through population and contains a considerably higher proportion of whites than the Follow Through population, which is almost entirely black. Follow Through classrooms are also more likely to include children who would normally be placed in special education classes but are able to remain in the Follow Through classrooms due to the increased opportunities for individualized instruction. There are no pre-Follow Through achievement test data which could be used to further establish the comparability of the Follow Through and control children.

---

*The parent aide is required to visit ten families each week, calling on each family in her classroom two or three times per year.

Ancillary Services

All Follow Through children are provided with breakfast, a Type A hot lunch, and an afternoon fruit snack each day. The breakfasts and lunches are served to Follow Through classes in the school's cafeteria; the snack is incorporated into the classroom's daily routine at circle time or small group evaluation time. In addition to providing a balanced diet, the meal-times provide an opportunity for informal and enjoyable social interaction among the children and offer each teacher another opportunity to extend educational goals.

In Okaloosa County a Follow Through nurse and nurse's aide work with the Follow Through staff to oversee the physical and dental health of the Follow Through children. All Follow Through children receive physical and dental examinations and necessary followup services, such as EKGs, x-rays, and blood tests for heart evaluations; tonsillectomies and hernia operations; ophthomological examinations and prescriptions for glasses if needed; treatment for intestinal parasites and impetigo; and provision of corrective shoes. In 1972-73 the Follow Through nurse and medical director completed 156 physicals during a four-month period. Many children were given followup treatment and medication for impetigo, ringworm, sandworm, sore throat, tonsillitis, and pneumonia. Thirty-seven children have been taken to doctors for surgical care, heart evaluations and minor ailments.

Dentists, the county dental program, and Follow Through cooperate to provide each child with a toothbrush and time to use it during the school day. In 1972-73, 24 dental assessments were made during a four-month period.

The school district psychologist works with Follow Through staff on testing as well as case studies of certain children.

Instructional Component

In order to compare Follow Through classrooms with non-Follow Through classrooms, it is necessary to look at both qualitative and quantitative aspects of the classroom environment. Following is a general discussion of the Follow Through instructional model and a detailed analysis of pupil-teacher ratios, staff turnover, staff involvement in outside activities, and the role of parents in the classroom.

The Follow Through staff's continuous involvement with the sponsor's cognitively oriented, child-centered approach has fostered changes in both the teacher's and children's classroom roles over the past five years. A "team" approach is evident, with the teacher, paraprofessional, and aide in each room jointly planning teaching activities for individual children and small groups. Responsibility for small group representation and evaluation times is also shared by the team members as they facilitate, support, question, and extend activities the children have initiated.

Another influence of the sponsor's Cognitively Oriented Curriculum model is that children in Okaloosa County Follow Through classrooms plan their own activities for the major part of the day. The materials and environment encourage the child's active involvement in building, socio-dramatic play, art, reading, writing, music, systematic care of plants and animals, and other activities suggested by team members, parents, or other children. Children recall their activities and internalize concepts by representing their work using a picture and story form. These stories are shared with small groups of children at school and provide the child with something of his own to take home and discuss with his family. Field trips are taken monthly to familiarize children with community institutions and processes at a concrete level. Books that children write and illustrate describing their experiences on field trips have been added to some school libraries.

In this dynamic setting equipment is in constant use--cassette tape recorders, record players, writing paper, pencils, crayons, felt pens, and building materials are some of the items children utilize to plan, pursue, and record their own projects. Wall to wall carpeting and open, easily accessible interest areas allow children the freedom and space needed for active exploration, along with the use of school grounds and the Parent House kitchen (see section on Parent Involvement, below).

Consultants visiting the site report an intense and exciting atmosphere in classrooms. Children are involved in many kinds of activities, ranging from basic exploration and manipulation of objects to independent reading and math work in many of the third grades. Most teachers are confident and proud of their input to the program; the atmosphere is such that over 25 non-Follow Through teachers have requested positions in Follow Through schools.

Adults other than the regular classroom teaching team are needed to facilitate and encourage the above-mentioned activities in the Follow Through program. In addition to the regular team of one teacher and two aides, the Okaloosa County Follow Through program employs three CAs, two release team teachers and two release team aides, a nurse and nurse's aide, and a social worker and a social work aide. The non-Follow Through classrooms have one teacher per classroom and do not have aides.

Table 2-1 illustrates the adult-pupil ratios in Follow Through and non-Follow Through classrooms in Okaloosa County schools. Note the consistently lower adult-pupil ratio in Follow Through classrooms. A non-Follow Through teacher has four times as many children to attend to as does a Follow Through teacher or aide.

Okaloosa County schools have a relatively high teacher turnover rate due to the mobility of Eglin Air Force Base personnel. The number of graduate students with families also contributes to the one- to two-year periods of employment in Okaloosa County schools. Table 2-2 shows an erratic turnover rate typical of mobile communities. Note that the percent of Follow Through teacher turnover has decreased regularly, while the non-Follow Through teachers show a less regular pattern. As the Follow Through teachers have become more confident in implementing the model, they have stayed with the program. At the close of 1971-72 the Follow Through staff felt that teachers were implementing the curriculum very competently and that one teacher per classroom would work out better than two. The staff model was changed accordingly. Thus, the 41% turnover does not accurately reflect the degree of teacher job satisfaction since the number of teacher openings decreased from 24 in 1971-72 to 16 in 1972-73.

Follow Through teachers have been absent more frequently than non-Follow Through teachers as shown in Table 2-3. However, due to the presence of several adults in the Follow Through classroom, a Follow Through teacher's absence causes somewhat less disruption in the child's daily routine than a non-Follow Through teacher's absence.

Follow Through staff frequently become involved in activities outside of school. Although no records have been kept on out-of-school activities, it has been estimated by the Follow Through staff that teachers spend 15-20 hours per year in school-related workshops or meetings, in addition to time spent collecting materials and planning on an individual basis. In 1972-73 out-of-school activities included home visits, parent meetings, seasonal parties, PAC meetings, state educational conferences, and after-school workshops. There is no record of non-Follow Through staff's extracurricular activities.

There has been some sharing of skills between the Follow Through staff and the non-Follow Through teaching community. Teaching teams have worked with curriculum assistants and model sponsor staff in planning and presenting workshops to other

Table 2-1

Okaloosa County
Adult-Pupil Ratios
for Follow Through and Non-Follow Through Classrooms

Year	Grades	FOLLOW THROUGH	NON-FOLLOW THROUGH
1968-69	1	1:8	1:32*
1969-70	1-2	1:10	1:32*
1970-71	K-1-2-3	1:8	1:32*
1971-72	K-1-2-3	1:9	1:32*
1972-73	K-1-2-3	1:7	1:32*

*Estimated

Table 2-2

Okaloosa County
Teacher Turnover in Follow Through and Non-Follow Through Schools

		FOLLOW THROUGH			NON-FOLLOW THROUGH		
YEAR	Grades	No. Teachers	No. Leaving	Percent Leaving	No. Teachers	No. Leaving	Percent Leaving
1968-69	1	12	9	75	11	3	27
1969-70	1-2	16	9	56	11	1	9
1970-71	K-1-2-3	28	14	50	11	5	45
1971-72	K-1-2-3	24	10[1]	41	11	0	0
1972-73	K-1-2-3	16	2*	12	11	**	**

[1] Staff model changed from two teachers/room in 1971-72 to one teacher/room in 1972-73.

*Estimated

**No records available

Table 2-3

Okaloosa County
Teacher Absences in Follow Through and Non-Follow Through Classrooms

Year	FOLLOW THROUGH			NON-FOLLOW THROUGH		
	No. Teachers	No. Days Absent	Mean No. Days Absent	No. Teachers	No. Days Absent	Mean No. Days Absent
1968-69	12	87	7.25	11	45	4.09
1969-70	16	114	7.12	11	52	4.72
1970-71	28	146	5.21	11	49	4.45
1971-72	24	107	4.45	11	55	5.00
1972-73	16	127	7.93	11	53	4.81

local teams in curriculum areas of particular interest. In addition, other schools in the area have requested curriculum support from the project staff. Non-Follow Through teachers have also adopted various aspects of the educational model for their own classrooms (e.g. room arrangement, the child's planning procedure, the communications program). Thus, project Follow Through in Okaloosa County is affecting education in more schools than those immediately involved in the program.

Follow Through parents are encouraged to take an active part in their child's education and 75% of the full-time aides in the classrooms are parents of present or former Follow Through children. In addition, all parents are invited to visit their children in school. Although many parents work or have younger children, about 20% make at least one visit to a Follow Through classroom during the school year. Classes average four to five parent visits per month. In the classroom, parents are encouraged to participate directly in classroom activities. It is hoped that from this very direct experience parents will carry on with some of the skills and games learned in the classroom when they are at home with their children.

The paraprofessional classroom staff and parents have benefited from the wide range of inservice training available through the Follow Through program. Workshops in developmental theory, teaching strategies, and teaching techniques have been introduced by Follow Through for aides and parents who wish to become classroom aides. The local junior colleges and adult education programs have offered courses for the completion of the General Equivalency Diploma (GED), as well as much needed courses in nutrition and home management. The home visiting aides have been instrumental in evaluating the need for these courses and encouraging local facilities to provide for these needs.

Non-Follow Through classes do not actively encourage parents to become an integral part of their children's school environment. Each classroom does have room parents who apparently help with parties and trips. However, these people do not have access to the educational opportunities open to Follow Through parents nor contact with visiting aides.

Effects on the Child

Attendance, retention and special education. As mentioned earlier, children are bused to Follow Through classrooms from eight school zones within the towns of Fort Walton Beach and Mary Esther. Most Follow Through children have a number of siblings and occasionally are kept home to look after the younger children. This family situation should be comparable for the control children, although the control children are not bused to school. Table 2-4 illustrates very similar attendance patterns for the two groups.

There are no special education or retention figures available for either Follow Through or non-Follow Through classes. The Follow Through program does report, however, that due to the flexibility in the Follow Through classrooms children have not been retained until they have reached the fourth grade, when the change is made from Follow Through to non-Follow Through classrooms. Some of the children have been held back at this point. Eighteen children were kept in Follow Through transition classes in 1971-72, and in 1972-73 one child was retained. There are no figures for 1973 from the Follow Through classes or from the non-Follow Through classes.

Achievement test data. The achievement data from Florida consist of California Achievement Test (CAT) total scores and Comprehensive Test of Basic Skills (CTBS) total scores. The CAT is an achievement test designed to measure the skill with which students are able to perform academic tasks such as reading, math, and language. The CTBS measures those skills which are prerequisite to studying and learning, rather than specifically measuring achievement in course content.

CAT data. CAT data were reported for Follow Through and non-Follow Through second and third graders who were tested about one month apart in fall, 1972. In order to make these scores comparable, a grade equivalent interval equal to one month's progress was added to the September (non-Follow Through) scores before they were analyzed. Because kindergarten began in 1970, Follow Through second and third graders had all experienced two years of Follow Through.

Table 2-5 shows the results of two one-way analyses of variance comparing Follow Through and non-Follow Through in the second and third grades. Both second and third grade non-Follow Through children had significantly higher mean scores than the Follow Through children. Part of these differences may be due to the rough correction factor added to the non-Follow Through scores and to the fact that testing is an activity much more foreign to Follow Through than to non-Follow Through classrooms.

CTBS results. CTBS data were reported for Follow Through and non-Follow Through fourth graders tested in fall, 1971 and fourth and fifth graders tested in fall, 1972. All of these children had been in Follow Through classrooms since first grade during the early years of the program's implementation. Table 2-6 shows the results of three one-way analyses of variance comparing Follow Through and non-Follow

Table 2-4

Okaloosa County
Attendance Rates in Follow Through and Non-Follow Through Classrooms

		FOLLOW THROUGH		NON-FOLLOW THROUGH	
Year	Grades	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance
1968-69	1	42	96	87	95
1969-70	1	90	93	195	93
	2	97	93	186	93
1970-71	K	95	86	355	91
	1	92	92	200	89
	2	91	91	212	95
	3	92	91	182	95
1971-72	K	85	86	300	91
	1	91	93	149	94
	2	89	93	148	93
	3	84	96	194	95
1972-73	K	80	91	270	90
	1	78	95	115	95
	2	89	94	129	94
	3	84	95	178	95

Table 2-5

Okaloosa County
Fall, 1972 CAT Comparisons for Follow Through and Non-Follow Through,
Grades 2 and 3

Grade	FOLLOW THROUGH		NON-FOLLOW THROUGH		F-ratio	df	p <
	N	Mean Score	N	Mean Score *			
2	86	189.84	36	269.03	147.42	1, 120	.001
3	79	235.85	91	286.78	45.43	1, 168	.001

*Adjusted by 1 month of grade equivalent.

Table 2-6

Okaloosa County
Fall, 1971 and Fall, 1972 CTBS Comparisons for Follow Through and Non-Follow Through,
Grades 4 and 5

		FOLLOW THROUGH		NON-FOLLOW THROUGH				
Year	Grade	N	Mean Score	N	Mean Score	F-ratio	df	p <
1971	4	20	22.25	31	39.94	39.578	1, 49	.001
1972	4	35	26.23	40	40.23	39.931	1, 73	.001
	5	35	30.86	33	52.61	64.586	1, 66	.001

Through children. In all cases the non-Follow Through children had significantly higher mean scores than the Follow Through children.

Due to the differences between the Follow Through and control populations discussed in the Comparability section of this report, the meaning of higher control group scores on the CAT and CTBS is unclear. These achievement test differences may very well not be a valid measure of program effects.

Parent Involvement

As mentioned earlier, parents are continually encouraged by Follow Through staff to take part in their child's education both in school and at home. At school, parents participate in the Follow Through "daily routine", working with their child or a small group of children; occasionally parents volunteer to lead an activity or read a story. Since some parents are employed in the Follow Through classroom as aides, they have an opportunity to assist daily in implementing the Follow Through sponsor's model. However, the number of parent aides employed by Follow Through is limited because of a county restriction which requires a high school diploma for teacher aides. Although Follow Through staff are attempting to remove this requirement, at present it remains in effect.

Parents are also encouraged to further their own educations and are invited to attend college cluster courses (cf. Staff Development section) with Follow Through aides. During the past two years, 20 parents have participated in the ten cluster courses offered. Also, parents who do not possess high school diplomas can enroll in local adult education courses in preparation for the high school equivalency exam or for high school or business education credit.

In Okaloosa County there is a Parent House for Follow Through families which has attracted better than half the Follow Through parents each year. The Parent House provides parents with a unique opportunity to become involved with the larger community as well as to improve business and homemaking skills, and participate in many other activities. This three-room meeting place located near the Fort Walton Beach Kindergarten Center opened in 1970-71. It contains a kitchen, living room, multi-purpose room, and laundry facilities. The Follow Through social worker manages the Parent House along with two social work aides and other community resource people. The Parent House is open from 8 a.m. to 5 p.m. Monday through Thursday and from 8 a.m. to 3 p.m. on Friday and is also available to community groups as a meeting place. Clothes, toys, and food are collected and distributed at the Parent House for needy families and the kitchen and laundry facilities are available for emergency family use. Informal courses are given in sewing, crafts, cooking, typing, home care, furniture-making, sanitation, and budgeting. A teen group (siblings of Follow Through children) and a subteen group also use the facilities.

The Policy Advisory Committee (PAC) meets regularly in the Parent House to focus on issues dealing with instruction, medical, dental, and nutritional care and psychological services. In 1972-73, PAC members initiated and planned a course on finance and budget. A Parent Personnel Committee was formed by the PAC to make recommendations on the hiring of teachers and aides for their children's classes. The PAC also requested and supported a slide tape presentation on the educational component of Follow Through. Another PAC function is the budgeting of finances.

Staff Development

Opportunities for staff development have continued to parallel the growth of Okaloosa County Follow Through. Teachers receive approximately 30 hours of paid inservice training each year. During the past year, the three CAs and the Project Director organized inservice workshops for and with their teachers based on particular goal sequences, content areas, and developmental theory. The Project Director, CAs, teachers and paraprofessionals have jointly planned the 1973-74 fall training workshop, calling on the sponsor's field staff for resources and support. In addition, teachers have spent time outside of school hours at other conferences and workshops. In 1972-73 several staff members attended the Florida State Follow Through conference and a state conference for area teachers in Tallahassee, Florida.

Staff involvement in educational pursuits has been extensive. Staff (CAs, teachers, and paraprofessionals) have been enrolled in both Bachelor's and Master's programs at local universities, and have participated in cluster courses (explained below). Paraprofessionals must have an associate degree (the equivalent of two years of college) to be hired by the Follow Through program and are encouraged to continue work towards a Bachelor's degree. Aides, who must be high school graduates, are required to take at least two college courses per year. A Follow Through Supplementary Training Grant received in 1971 enables the project to pay aides for taking these courses. The Grant allows aides to take two classes per trimester in the lower division (freshman and sophomore levels) and one course per trimester in the upper (junior and senior level) division at Okaloosa Walton Junior College and the University of West Florida. Each class holds 25 students and qualified Follow Through parents are also invited to join if vacancies exist. During the 1972 winter quarter the following number of people were enrolled in courses:

. Child Development - 15 aides and three parents

. Reading Improvement - nine aides and five parents

. Speech - one aide

In order to ease the aides' transition into a college setting, the Follow Through project initiated "cluster courses" for college credit which are held at local schools and are open to aides and parents. Follow Through is responsible for registering aides and parents in these cluster courses. In 1972-73, the three Follow Through CAs taught a cluster course entitled "Curriculum for Young Children" which focused on planning, executing, and team evaluation of activities in Follow Through classrooms.

After taking advantage of the cluster courses, the aides are expected to register and integrate themselves into the larger on-campus community. The space in the cluster is then opened up for another aide or parent. During the past two years, 20 parents have participated in these courses, and 16 parents have taken a remedial math course offered for them. Five aides will be eligible for higher salaries in the fall as a result of completing one year of college and two paraprofessionals have become certified teachers.

Another person active in staff development is the Home Program Coordinator, who organizes inservice training sessions for parent aides who make home visits. The Cognitively Oriented Curriculum is examined in these sessions and activities with materials familiar to the parents are developed for use on home visits.

Influence of Follow Through on the Schools and Community

As mentioned previously, non-Follow Through teachers have been attending Follow Through inservice workshops on a regular basis and elements of the model are visible in non-Follow Through classrooms: room arrangement, a portion of child-planned time, child-initiated activities, and language experience stories. Also, two non-Follow Through schools have requested consultation with the CAs on the open classroom concept. The CAs gave an informal workshop on room arrangement, Piaget's developmental theory, representation and communication at Longwood Elementary School. A junior high social studies teacher has requested consultation on how to open up his classes and provide the students with more self-directed activity.

Community recognition of Follow Through has developed slowly to the point where there is now definitely a place for the project in Fort Walton Beach. Activities which highlight this acceptance include:

- Many schools considering the open classroom concept come to Follow Through staff for advice.
- The Follow Through Parent House and various other social services are utilized by members of the larger community.
- Applications for Follow Through teaching positions and child enrollments exceed the available openings.
- One Follow Through teacher was named the Teacher of the Year by the Fort Walton Chamber of Commerce.
- Initially the Follow Through program was not popular with the white population of Okaloosa County and Fort Walton Beach since it was composed of 95% black children. The Follow Through social worker has recruited 35 white children for kindergarten classrooms for the 1973-74 school year. This fact, too, points out the changing attitudes and general acceptance of Follow Through in Okaloosa County.

Summary

A major strength of the Okaloosa County Follow Through program has been its ability to actively and enthusiastically engage children, staff, and parents in the educational process. Children have become involved in a variety of innovative activities; staff members have learned new skills which they have shared with the larger community; parents have upgraded their own educations as well as becoming increasingly involved in their children's educations. However, control children still performed better than Follow Through children on the limited amount of achievement test data available. Hopefully, these results will be clarified as larger amounts of more comparable data become available.

RIVERTON - ST. STEPHEN'S

The Riverton-St. Stephen's Follow Through program with High/Scope Educational Research Foundation serving as model sponsor began in July 1970. The two schools selected for program implementation were Jefferson Elementary in Riverton and St. Stephen's Mission School, located on the Wind River Indian Reservation. The area served by Follow Through encompasses roughly 3,000 square miles, but the two Follow Through schools are about five miles apart. Located in west central Wyoming just east of the Continental Divide, the Wind River Reservation is bounded on the north by the Owl Creek Mountains and on the west by the Wind River Range. From these heights, streams and rivers flow south and east to form the fertile valleys and rolling plains of the lower elevations where the majority of the people reside. Mainly Arapahoe and Shoshone Indians live on the Wind River Reservation, while 9,000 people (mostly whites) live in Riverton.

In 1970-71, the Riverton-St. Stephen's Follow Through project was implemented in eight classrooms, six at Jefferson Elementary School (grades 1-3) and two at St. Stephen's (grades 1 and 2). Three kindergarten classes were added in 1971; two at Jefferson and one at St. Stephen's. Presently 12 classrooms, covering grades K through 3 and serving 250 children, are in the Follow Through program--eight at Jefferson and four at St. Stephen's.

Comparability of Follow Through and Control Children

Lincoln Elementary School, located in the same Riverton school district as Jefferson Elementary, was chosen as the control (non-Follow Through) school because of its similarity to Jefferson and St. Stephen's in student population, economic backgrounds of parents, and geographic location. Most of the target children in all three schools have had Head Start or other preschool experience.

Approximately 32.5% of the Follow Through student population are American Indian (most members of this ethnic group attend St. Stephen's Mission School), but the majority (59.2%) of the students are white. Mexican Americans make up the remainder of the population (approximately 8.1%). There are no statistical data available for a breakdown of the ethnic composition of the control children at Lincoln, but it appears to be similar to that of Jefferson School, predominantly white with Mexican American and American Indian minorities.

About 64% of the Follow Through children come from low income families. Parents are employed in a variety of occupations, including farmers, range workers, semi-skilled workers, miners, and white collar workers. Because the control children live in or near Riverton, their parents are somewhat more likely to be employed in semi-skilled or skilled occupations than the combined Jefferson-St. Stephen's parent population.

The comparability of the learning skills of the children from Jefferson and Lincoln schools prior to Follow Through experience is suggested by Metropolitan Achievement Test data. Since the Follow Through program was established in Jefferson School in fall 1970 in grades K through 3 those children in the fourth and fifth grades in spring, 1971 and those in the fifth grade in spring 1972 never experienced the Follow Through program. There are, in fact, significant differences on only two of the sixteen possible subtest comparisons for these grades and years. Jefferson fourth graders scored significantly better on the Language subtest in 1971 ($F=10,864$; $df=1,104$; $p<.001$) and on the Spelling subtest when they were fifth graders in 1972 ($F=4.861$; $df=1,110$; $p<.05$). There were no significant differences on any of the fifth grade scores in 1971. Thus, there appears to be general comparability in the achievement scores of the pre-Follow Through children from the two schools.

Ancillary Services

There is an initial medical-dental screening of Follow Through children at the beginning of each school year. Every other year, they receive complete physical examinations at a local physician's office (in 1972-1973, 133 physicals were performed). In addition, Follow Through children receive all types of innoculations, complete dental care, eye examinations and glasses if needed (last year 36 students were fitted with glasses). As a result of these standard examinations, 45 students were treated last year for medical and dental impairments. In cases where parents could not afford medical treatments for their child, the Follow Through staff aided in a survey of community resources to help parents with payments. Every three years students are given immunizations for diptheria, tetanus, polio (booster), mumps, German and regular measles and TB.

Under the nutrition program, Follow Through children were served type A hot lunches all year, plus a morning or afternoon snack at Jefferson and breakfast at St. Stephen's. Last year the food surplus from this program was used for a picnic for all the Follow Through children, staff, and parents on the last day of school.

Children in need of psychological services were referred to the Fremont County Mental Health Office. It has been noted that the project's utilization of social and psychological services is not in strict accord with the instructions in the federal Follow Through guidelines (The On-Going Evaluation Report, Follow Through Program, 1972-1973). However, the project director is currently studying various ways of expanding these services while taking budgetary constraints into account.

Instructional Component

This section begins with a brief qualitative description of the classroom environment followed by a more detailed discussion of various quantitative aspects of that environment.

During the first two years of the Riverton Follow Through program there were numerous administrative difficulties. Due to these problems, Follow Through program implementation suffered. Presently, however, local Follow Through project staff work hard to ensure a cognitively oriented, child-centered approach in each Follow Through classroom. The teaching team attempts to maintain an atmosphere in which children feel free to initiate and followup activities with other children, adults, and objects in the environment. Thus, the teacher (and/or the aide) acts as a catalyst between the learning situation she provides, and the child's interaction with the environment and his peers.

Children are encouraged to take the responsibility of working in small groups, assisting one another and working at their own level of development in a manner that permits them to learn to the limit of their current intellectual skills. The teachers have noted that this type of classroom atmosphere removes the threat of failure, enabling the child to use his less successful experiences as a basis for future learning because he is no longer afraid to try. This is evident in the pride of achievement shown by "slow" children and others in both individual and group activities. Teachers have also noticed a variety of positive behavioral changes on the part of their students as a result of the Follow Through program.

During the first two years of operation, the staff model in the Riverton Follow Through classrooms consisted of one teacher and two aides for grades 1-3; in 1971 the model also included two teachers and one aide in the kindergarten classrooms. In 1972-73 the staff model was changed to one teacher and one aide for grades 1-3 and one teacher and two aides in the kindergarten classrooms, plus a release team of one additional teacher and aide for each of the Follow Through schools. By comparison, the average non-Follow Through classroom for the past three years has consisted of one teacher and one half-time aide for every 26-28 pupils.

Tables 4-1 and 4-2 illustrate staffing patterns in the Follow Through and non-Follow Through schools. Note the consistently lower adult-pupil ratios in Follow Through classrooms which permit more emphasis on individualized and small group instruction and also the consistently higher percentage of parent aides in the Follow Through schools. Follow Through children not only have a greater number of teachers and aides available on a full-time basis, but also a greater number of adults from their own neighborhoods and social class.

Table 4-3 shows that job turnover has been low for both Follow Through and non-Follow Through teachers. However, teacher absence rates have been almost twice as high among non-Follow Through teachers as among Follow Through teachers. Thus, teachers in the Follow Through classrooms seem to be more satisfied with their jobs than those in the non-Follow Through school. According to a local self-evaluation report, "All or 100% of the certified [Follow Through] staff indicated job satisfaction". (The On-Going Evaluation Report, p. 15). Apparently children in Follow Through classrooms not only have more chances for access to teachers due to better adult-pupil ratios but also have more consistent relationships with adults due to lower teacher absence rates.

Staff involvement in extended days activities and after-hours work or meetings is shown in Table 4-4. The comparative data (which were estimated by the Follow Through project director) indicate that Follow Through staff have been involved to a greater degree in extended days activities than the non-Follow Through staff. Besides attending the weekly in-service meetings scheduled for them at the Follow Through school sites, teachers participated in a variety of additional extracurricular activities:

- Participants in various training workshops scheduled sessions at home to disseminate information to their colleagues.
- Staff participated in the Regional Education Fair that was held in Cheyenne, Wyoming.
- Staff made presentations at parent coffees.
- Teachers made home visits.
- Three teachers and the Follow Through director conducted a math training session for 26 Thermopolis, Wyoming teachers.

Table 4-1

Riverton
Follow Through Staffing Patterns in Jefferson and St. Stephens Schools

Year	Grades	No. Classrooms	No. Teachers	No. Aides	No. Parent Aides	Percent Parent Aides	Enrollment	Adult-Pupil Ratio
1970-71	1-2-3[†]	8	8	16	6	38	197	1:8
1971-72	K-1-2-3	12	14	22	7	32	237	1:9
1972-73	K-1-2-3	12	14	21	7	33	327	1:11*

†Jefferson = 1-3
St. Stephens = 1 & 2

*Kindergarten = 1:9
Grades 1 - 3 = 1:13

Table 4-2

Riverton
Non-Follow Through Staffing Patterns in Lincoln School

Year	Grades	No. Classrooms	No. Teachers	No. Aides	No. Parent Aides	Percent Parent Aides	Enrollment	Adult-Pupil Ratio
1970-71	1-2-3	8	8	9	1	11	224*	1:19*
1971-72	K-1-2-3	10	10	10	1	10	262	1:17
1972-73	K-1-2-3	10	10	11	1	9	273	1:18

*Estimated

Table 4-3

Riverton
Teacher Absences and Teacher Turnover in Follow Through and Non-Follow Through Classrooms

	FOLLOW THROUGH					NON-FOLLOW THROUGH				
		Teacher Absences		Teacher Turnover			Teacher Absences		Teacher Turnover	
Year	No. of Teachers	Total Days	Average Days per Teacher	Number	Percent	No. of Teachers	Total Days	Average Days per Teacher	Number	Percent
1970-71	8	10.0	1.2	0	0	8	16.0	2.0	1	12
1971-72	14*	34.5	2.5	0	0	10	38.0	3.8	1	10
1972-73	14*	32.5	2.4	1	7	10	51.0	5.1	0	0

*Including two release teachers

Table 4-4

Riverton
Estimated Hours of Staff Involvement in Extra Activities, Meetings, After-Hours Work, and Extended Days Activities

	Staff Hours per Week	
Year	Follow Through	Non-Follow Through
1970-71	1.5*	less than 0.1*
1971-72	1.5*	less than 0.1*
1972-73	2.5*	less than 0.1*

*Estimated by Project Director

- One Follow Through teacher conducted a course in the TABA social studies curriculum for teachers throughout the school district.

- Slide-tape presentations were produced.

- Kindergarten teachers and the Follow Through director explained the Follow Through program to Montessori preschool parents.

While certain aspects of the program, such as home visits, automatically provide opportunities for out-of-school activities, it appears that Follow Through staff members have found it necessary and meaningful to spend more after-work time in school-related activities than their non-Follow Through colleagues.

Parents and other members of the community have also volunteered their services in Follow Through classrooms, as can be seen in Table 4-5. In non-Follow Through classrooms, on the other hand, volunteer services are practically nonexistent, according to the Project Director. Note also in Table 4-5 that parents of Follow Through children, who are encouraged to observe and participate in their children's education, visit their children's classrooms three to eight times more often than non-Follow Through parents.

Effects on the Child

Attendance, retention and special education. A comparison of attendance rates between the Follow Through and non-Follow Through schools (Table 4-6) shows that the non-Follow Through school has slightly higher student attendance rates than the two Follow Through schools. However, this was the case even before Follow Through was implemented (see grades 4-5 for 1970-72). Of the two Follow Through schools, St. Stephen's attendance rates are consistently lower than those for Jefferson. Since children attending St. Stephen's come from poorer rural homes located on an Indian reservation, hardships and problems specific to this group are factors which must be considered when discussing attendance at school. For these reasons, student attendance rates cannot be judged to be significant factors when measuring the impact of the Riverton-St. Stephen's Follow Through program on children.

Table 4-7 shows that the same number of Follow Through and non-Follow Through children were retained in grades 1-3 during the 1970-1972 school years. Comparison data are unavailable for 1972-1973 due to a policy of not retaining children in Follow Through classrooms unless they have problems adjusting to their new grade in the fall. For both the Follow Through and control groups no children were retained in grades 4-5.

Table 4-5

Riverton
Number of Volunteer Hours and Parent Visits in Follow Through and Non-Follow Through Classrooms

	FOLLOW THROUGH			NON-FOLLOW THROUGH		
Year	No. Volunteer Hours	No. Children	No. Parent Visits	No. Volunteer Hours	No. Children	No. Parent Visits
1970-71	100*	197	**	0*	224*	10*
1971-72	40*	237	30*	0*	262	10*
1972-73	30*	327	76	0*	273	10*

*Estimated by Project Director

**No Records

Table 4-6

Riverton
Attendance Rates in Follow Through and Non-Follow Through Classrooms

		FOLLOW THROUGH				NON-FOLLOW THROUGH	
		St. Stephens		Jefferson		Lincoln	
Year	Grades	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance
1969-70	1	31	92	69	95		
	2	31	90	83	96		
	3			54	96		
	4			56	96		
	5			51	92		
1970-71	1*	27	90	55	95	65	94
	2*	33	92	82	94	62	96
	3*			59	95	70	96
	4			54	95	66	96
	5			50	95	87	96
1971-72	K*	30	85	55	86	112	93
	1*	21	89	54	94	56	95
	2*	29	93	58	95	5[illegible]	96
	3*	32	92	57	94	57	97
	4*			57	94	59	97
	5			56	95	63	96
1972-73	K*	33	89	58	90	123	94
	1*	42	88	57	93	60	94
	2*	27	90	57	93	59	94
	3*	33	92	49	94	54	95
	4*			55	94	62	93
	5*			51	92	63	96

*Grades in which children are or have been in Follow Through at Jefferson and St. Stephens Schools.

Table 4-7

Riverton
Children Retained in Follow Through and Non-Follow Through Classes

Year	FOLLOW THROUGH			NON-FOLLOW THROUGH		
	Number Enrolled	Number Retained	Percent Retained	Number Enrolled	Number Retained	Percent Retained
1970-71	197	0	0.0	224	0	0.0
1971-72	237	3	1.3	262	3	1.1
1972-73	327	*	*	273	4	1.5

*Not Available

It is significant to note that from 1970 to 1973 none of the Follow Through children were placed in special education classes. In contrast, it is reported that the number of non-Follow Through children in special education classes is estimated at 6/621 (1970-1972) and 6/713 (1972-1973), the denominator being the total enrollment for the entire school district. It should be pointed out that the children who are in special education are not in grades 4-5 but in the earlier grades. From these data, it would appear that Follow Through children do not have serious adjustment problems when changing to regular classrooms.

Achievement test comparisons. The achievement data from Riverton consist of Metropolitan Achievement Test (MAT) scores from Jefferson (Follow Through) and Lincoln (non-Follow Through) schools, and Wide Range Achievement Test (WRAT) scores from Jefferson and St. Stephen's schools (both Follow Through). The MAT and the WRAT are composed of subtests which assess a student's achievement in various academic skills, such as reading, spelling, language, and arithmetic. The results were reported as scores for these subtests, rather than totals for the entire battery of tests.

MAT data. As discussed earlier, the learning skills of the Jefferson and Lincoln fourth and fifth graders were comparable prior to the implementation of the Follow Through program in Jefferson school. None of the children in the Lincoln school control group have had Follow Through experience. However, the experimental group consists of both children with only Follow Through experience and children with mixed Follow Through and non-Follow Through experience. The data analysis, then will attempt to show differences between children with Follow Through and non-Follow Through experience and also differences between children with a homogeneous Follow Through experience and a mixed Follow Through and non-Follow Through experience.

MAT scores for comparing experimental and control children during the first year of the Follow Through program (1970-71) were not available. Riverton reported scores for second and third graders from the second year of Follow Through implementation (1971-72). The second grade scores were from the spring 1972 testing. These second grade Follow Through children were in non-Follow Through kindergarten classrooms and then entered Follow Through for first and second grade. A one-way analysis of variance was done on the Reading and Math subtests (see Table 4-8). The non-Follow Through children scored significantly better than the Follow Through children on both subtests.

Follow Through and non-Follow Through third graders were compared on the MAT Reading and Math subtests given in both fall, 1971 and spring, 1972. These Follow Through third graders

Table 4-8

Riverton
Follow Through and Non-Follow Through MAT Scores from Spring, 1972, Grade 2

Subtest	FOLLOW THROUGH		NON-FOLLOW THROUGH		F-ratio	df	p <
	N	Mean Score	N	Mean Score			
Reading	33	49.24	23	56.00	6.354	1, 54	.05
Math	33	52.64	23	65.91	29.047	1, 54	.001

had experienced kindergarten and first grade in non-Follow Through classes, and second and third grade in Follow Through classes. A two-way analysis of variance was done on the fall and spring scores for Follow Through and control children for both subtests. The means for this comparison (see Table 4-9) showed the non-Follow Through children performing significantly better on both the fall and spring testings for both the Reading and Math subtests. The Follow Through and non-Follow Through children improved comparably from the fall to the spring testing and the lack of a significant interaction effect showed that there is no difference in the amount that was learned between the fall and spring testings for Follow Through and non-Follow Through children.

There were no MAT scores available for the 1972-73 school year for comparing the second grade Follow Through to non-Follow Through children, but fall, 1972 and spring, 1973 scores for the MAT Reading and Math subtests for the third grades in Jefferson and Lincoln schools were reported. These Follow Through third graders had kindergarten in non-Follow Through classes and first through third grades in Follow Through classes. The means showed non-Follow Through children performing better on both the Reading and Math subtests (see Table 4-10). However, these differences between Follow Through and non-Follow Through scores were not significant. A two-way analysis of variance showed that there was also no difference in the amount of change from fall to spring between Follow Through and non-Follow Through scores (the interaction effect). That is, as the 1971-72 third grade scores showed, the Follow Through and non-Follow Through children seemed to learn a similar amount during the year. However, where the 1971-72 Follow Through third graders with two years of Follow Through had not performed as well as the non-Follow Through third graders, the 1972-73 third graders with three years of Follow Through, scored as well as the non-Follow Through control children.

Fourth graders were compared at both fall, 1972 and spring, 1973 testings by one-way analyses of variance. Four subtest scores, Reading, Language, Spelling, and Math, were reported for each testing. These Follow Through fourth graders had kindergarten and first grades in non-Follow Through classes, second and third grades in Follow Through, and were in a non-Follow Through fourth grade when tested. The fall 1972 testing showed higher mean scores for the control children on each of the four subtests (see Table 4-11). A one-way analysis of variance on each of the subtests showed the differences in scores to be significant for the Spelling and Math subtests and not significant for the Reading and Language subtests. The spring 1973 mean scores from two Follow Through and two

Table 4-9

Riverton
Follow Through and Non-Follow Through MAT Comparisons for Fall, 1972 and Spring, 1973, Grade 3

Reading

	Fall, 1972		Spring, 1973	
	N	Mean Score	N	Mean Score
FOLLOW THROUGH	25	55.24	25	62.84
NON-FOLLOW THROUGH	24	59.79	25	66.12

$F_{interaction} = .0652$; df = 1, 95; p = N.S.

$F_{main} = 2.4713$; df = 1, 95; p = N.S.

Math

	Fall, 1972		Spring, 1973	
	N	Mean Score	N	Mean Score
FOLLOW THROUGH	25	57.16	25	70.92
NON-FOLLOW THROUGH	24	62.88	25	75.28

$F_{interaction} = .1061$; df = 1, 95; p = N.S.

$F_{main} = 5.865$; df = 1, 95; $p < .05$

Table 4-10

Riverton
Follow Through and Non-Follow Through MAT Comparisons for Fall, 1971 and Spring, 1972, Grade 3

Reading

	Fall, 1971		Spring, 1972	
	N	Mean Score	N	Mean Score
FOLLOW THROUGH	39	46.56	37	53.24
NON-FOLLOW THROUGH	40	58.33	38	66.53

$F_{interaction}$ = .1492; df = 1, 150; p = N.S.

F_{main} = 40.379; df = 1, 150; p < .001

Math

	Fall, 1971		Spring, 1972	
	N	Mean Score	N	Mean Score
FOLLOW THROUGH	39	50.72	37	61.38
NON-FOLLOW THROUGH	40	64.83	37	75.49

$F_{interaction}$ = .000; df = 1, 149; p = N.S.

F_{main} = 60.960; df = 1, 149; p < .001

Table 4-11

Riverton

Follow Through and Non-FOllow Through MAT Comparisons for Fall, 1972, Grade 4

Subtest	FOLLOW THROUGH		NON-FOLLOW THROUGH		F-ratio	df	p <
	N	Mean Score	N	Mean Score			
Reading	26	57.77	42	65.17	3.556	1, 66	N.S.
Language	26	65.89	42	69.62	1.606	1, 66	N.S.
Spelling	26	57.54	41	64.88	8.677	1, 65	.01
Math	26	62.69	42	72.31	10.041	1, 66	.01

Table 4-12

Riverton

Follow Through and Non-Follow Through MAT Comparisons for Spring, 1973, Grade 4

Subtest	FOLLOW THROUGH		NON-FOLLOW THROUGH		F-ratio	df	p <
	N	Mean Score	N	Mean Score			
Reading	54	71.22	57	76.84	5.598	1, 109	.05
Language	54	76.35	57	80.47	3.128	1, 109	N.S.
Spelling	54	68.46	57	73.23	5.250	1, 109	.05
Math	54	79.54	57	83.11	2.973	1, 109	N.S.

control classes showed the control children again with higher mean scores for all of the subtests. A one-way analysis of variance on each subtest showed the differences in scores to be significant for the Reading and Spelling subtests, and not significant for the Language and Math subtests (see Table 4-12).

Two Follow Through and two non-Follow Through fifth grade classes from Jefferson and Lincoln schools reported MAT scores for spring 1973 on six subtests--Reading, Language, Spelling, Math, Science, and Social Studies. These Follow Through fifth graders had only one year of Follow Through experience (third grade). Non-Follow Through children had higher mean scores on all subtests (see Table 4-13). A one-way analysis of variance on each subtest showed all differences to be significant.

The MAT testing in 1972-73, as in 1971-72, showed the non-Follow Through children scoring better than the Follow Through children on most subtests. When a two-way analysis could be done, as with the 1971-72 and 1972-73 third grade scores, the interaction effect showed that the Follow Through and non-Follow Through children were learning at a comparable rate even though the non-Follow Through children scored higher at both fall and spring testings. None of the Follow Through classes compared, however, had the Follow Through Cognitively Oriented Curriculum for their entire educational experience. Some of the children had, in fact, an erratic experience of very different classroom styles as compared to the more consistent experience of non-Follow Through classrooms. While it was expected that children who participated in the Follow Through program from kindergarten through third grade would compare favorably over the same period with the control group, it was unclear what to expect from alternating years of Follow Through and non-Follow Through experience. It is important, then, to examine a series of scores which might show the effects of alternating Follow Through and non-Follow Through experience.

It has already been seen that the fourth and fifth graders with Follow Through experience in both the second and third grades or in the third grade did not score as well as the control groups (tested in fall 1972 and spring 1973). It was unclear how much of the difference in performance was a result of the failure of the Follow Through model to teach the skills assessed by the test, and/or how much was the result of a conceivably difficult transition from Follow Through classrooms to non-Follow Through classrooms, or possible confusion resulting from changing through two very different learning environments.

Table 4-13

Riverton
Follow Through and Non-Follow Through MAT Comparisons for Spring, 1973, Grade 5

Subtest	FOLLOW THROUGH		NON-FOLLOW THROUGH				
	N	Mean Score	N	Mean Score	F-ratio	df	p <
Reading	51	76.59	57	83.56	9.946	1, 106	.01
Language	51	76.37	57	86.70	20.165	1, 106	.001
Spelling	50	74.96	57	83.61	12.137	1, 105	.001
Math	51	85.53	57	89.86	4.495	1, 106	.05
Science	51	79.31	57	87.91	15.203	1, 106	.001
Social Studies	51	79.71	57	90.02	22.760	1, 106	.001

It has been established that the fourth graders from Jefferson and Lincoln schools were comparable prior to the implementation of Follow Through. A comparison of fourth graders' fall 1970 scores (pre-Follow Through implementation, no Follow Through experience) with fourth graders tested in fall 1971 (one year of Follow Through experience in third grade) and fourth graders tested in fall 1972 (two years of Follow Through experience as second and third graders) might show how much of the difference between Follow Through and non-Follow Through scores from year to year could be attributed to alternating years of Follow Through with non-Follow Through experience for the experimental Follow Through groups.

The mean scores for the three different testings showed a pattern (see Table 4-14) of decreasing from fall 1970 to fall 1971 on all subtests, and then increasing substantially from fall 1971 to fall 1972 on the Reading and Language subtests while remaining virtually the same on the Spelling and Math subtests. The one-way analyses of variance for all subtests showed a significant change in scores over the three years. If alternating non-Follow Through with Follow Through classroom experience did create problems for the children, a drop in scores would be expected from 1970 (children who had no Follow Through experience) to 1971 (children who had only one year of Follow Through in the third grade). This in fact, did happen. When these 1970 and 1971 scores were compared by t tests and Scheffe tests, both t and Scheffe were significant (see Table 4-15). There was also a difference between the 1970 and 1972 scores, where children with a homogeneous non-Follow Through experience scored higher than those with two years of Follow Through preceded by two years of non-Follow Through and followed by one year of non-Follow Through. This difference was significant for both t and Scheffe tests for the Reading, Spelling, and Math subtests (see Table 4-13). The difference between the 1970 and 1972 testings on the Language subtest was not significant for either the t or Scheffe (see Table 4-15). As expected, children with two years of Follow Through experience tended to perform better than the children with one year of Follow Through experience. The Reading, Language, and Math subtests showed an increase in mean scores from 1971 to 1972. This increase was significant for both t and Scheffe for the Reading subtest, but not significant for either t or Scheffe for Language and Math. The Spelling subtest showed a slight decrease in mean scores from 1971 to 1972, which was not significant for either t or Scheffe (see Table 4-15).

A similar comparison was made for Jefferson fifth graders tested in spring 1971, 1972, and 1973. Neither the fifth graders from 1971 or 1972 had Follow Through experience, but

Table 4-14

Riverton
Jefferson School Fourth Grade MAT Comparisons for Fall, 1970, 1971, 1972

	1970		1971		1972				
Subtest	N	Mean Score	N	Mean Score	N	Mean Score	F-ratio	df	p <
Reading	26	68.29	26	47.42	26	57.77	21.428	2, 75	.001
Language	26	71.62	24	60.71	26	65.89	6.645	2, 73	.01
Spelling	26	70.08	25	59.64	26	57.54	12.631	2, 74	.001
Math	26	76.85	26	62.62	26	62.69	13.099	2, 75	.001

Table 4-15

Riverton
MAT Pairwise Comparisons of Jefferson Fourth Grade from Fall, 1970, 1971, 1972

Subtest	Difference in Means	p <		Difference in Means	p <		Difference in Means	p <	
	1970/1971	t	Scheffé	1970/1972	t	Scheffé	1971/1972	t	Scheffé
Reading	21.27	.001	.05	10.92	.001	.05	10.35	.01	.05
Language	10.91	.001	.05	5.73	.05	N.S.	5.18	N.S.	N.S.
Spelling	10.44	.001	.05	12.54	.001	.05	2.10	N.S.	N.S.
Math	14.23	.001	.05	14.15	.001	.05	.77	N.S.	N.S.

the fifth graders from 1973 had one year of Follow Through in the third grade. This alternation of non-Follow Through and Follow Through would be less expected to appear disruptive at this point in these children's education. They had participated in Follow Through only one year out of six, and already had almost two full years of non-Follow Through experience since then. Table 4-16 shows the decrease in mean scores from 1971 to 1973 across all subtests. One-way analyses of variance on the six subtests showed this decrease in scores to be significant for all subtests except Social Studies.

There was an unexpected uniform decrease in mean scores on all subtests from 1971 to 1972. Neither the 1971 nor 1972 fifth graders had experienced Follow Through and no difference would be expected between the scores. This decrease, however, was significant for the Reading subtest, although not for any of the other subtests (see Table 4-17). While the difference between 1972 and 1973 was expected, there was no apparent explanation for the decrease from 1971 to 1972. Because of the uniform decrease in mean scores over the three years, it was unclear whether the 1972-73 decrease was a result of mixed Follow Through and non-Follow Through experience or an independent effect. In order to clarify the meaning of these differences, a weighted pairwise comparison of the two non-Follow Through years (1971 and 1972) with the one mixed year (1973) was done. The Scheffe test results in Table 4-15 show that the differences between the homogeneous and mixed experiences were not significant. This result points to the existence of some trend, independent of Follow Through's influence, creating the year to year differences, and supports the expectation that the difficulties in transferring from Follow Through to non-Follow Through classes are absorbed over two years' time and do not cause permanent problems.

The available MAT data showed the non-Follow Through children scoring better than the Follow Through children on most subtests and at most grade levels. However, in all of these comparisons the Follow Through children had experienced an alternation of non-Follow Through and Follow Through participation which was very likely a difficult and/or confusing transition to make. The longitudinal comparison of fourth graders, in part, showed a decrease in scores when children with no Follow Through experience were compared to children with one year of Follow Through mixed in with four years of non-Follow Through classroom experience. The children with two years of Follow Through mixed in with three years of non-Follow Through scored better, however, than those with only one year of Follow Through, though still not as well as the children with all non-Follow Through experience. Moreover, the Follow Through children for whom data were available experienced the program during a time when the effective implementation of the Cognitively Oriented Curriculum was severely hampered by various administrative difficulties. It will be important to see how Riverton children with a full, uninter-

Table 4-16

Riverton
Jefferson School Fifth Grade MAT Comparisons for Spring 1971, 1972, 1973

Subtest	1971		1972		1973				
	N	Mean Score	N	Mean Score	N	Mean Score	F-ratio	df	p <
Reading	48	84.229	54	79.19	51	76.59	5.794	2, 150	.01
Language	48	84.54	53	81.89	51	76.37	7.189	2, 149	.001
Spelling	48	82.38	53	82.15	50	74.96	6.505	2, 148	.01
Math	48	91.25	52	88.23	51	85.53	3.901	2, 148	.05
Science	48	85.31	52	82.33	51	79.31	3.866	2, 148	.05
Social Studies	48	84.25	52	82.08	51	79.71	2.393	2, 148	N.S.

Table 4-17

Riverton
MAT Pairwise Comparisons of Jefferson Fifth Grades from Spring 1971, 1972, 1973

Subtest	Difference in Means	p <		Difference in Means	p <		Difference in Means	p <		Difference in Means	p <
	1971/1972	t	Scheffé	1971/1973	t	Scheffé	1972/1973	t	Scheffé	1971-1972/1973	Scheffé
Reading	5.04	.05	N.S.	7.64	.001	.05	2.60	N.S.	N.S.	5.12	N.S.
Language	2.65	N.S.	N.S.	8.17	.001	.05	5.51	.01	.05	6.84	N.S.
Spelling	.22	N.S.	N.S.	7.42	.01	.05	7.19	.01	.05	7.30	N.S.
Math	3.02	N.S.	N.S.	5.72	.01	.05	2.70	N.S.	N.S.	4.21	N.S.
Science	2.99	N.S.	N.S.	6.00	.01	.05	3.01	N.S.	N.S.	4.51	N.S.
Social Studies	2.17	N.S.	N.S.	4.54	.05	N.S.	2.37	N.S.	N.S.	3.46	N.S.

rupted Follow Through experience compare to the control children when that data become available.

WRAT data. The WRAT scores of kindergarten through third grades for the fall and spring testings of 1971-72 and 1972-73 are reported in Table 4-18. No WRAT data were available for the control school (Lincoln). Therefore, these Follow Through WRAT scores were compared to the national grade equivalent norms for each grade on three subtests--Reading, Spelling, and Math.

The Jefferson Follow Through children tended to have higher mean scores than the St. Stephen's Follow Through children on all of the subtests for both 1971-72 and 1972-73 testings with the exception of Spelling in 1971-72. Both schools tended to perform better on the Reading and Math subtests than on the Spelling subtest in comparison to the national norms. The average Jefferson score was .02 grade equivalents ahead of the national norm, and St. Stephen's mean score was .2 grade equivalents behind the national norm.

The MAT data suggested that children with more years of Follow Through experience compared more favorably to their control groups than children with fewer years of Follow Through experience. It would be expected, then, that for the second and third grades, the 1972-73 WRAT testings would show better scores than the 1971-72 testings, since the children in 1971-72 would have had nearly two years of Follow Through in 1971, and almost three continuous years of Follow Through in 1972-73. This pattern can be seen for most subtest comparisons for both Jefferson and St. Stephen's schools.

Parent Involvement

One of the major thrusts of the Follow Through program has been to encourage parents to become actively involved in the education of their children. Parent coffees, employment of parents as teacher aides in the classrooms, home visits, parent classroom volunteer visits, PAC parent involvement, and related activities have all been initiated by Follow Through staff to achieve this goal. About 50% of the teacher aides hired by Riverton-St. Stephen's Follow Through are or have been parents of Follow Through children.

As mentioned earlier, parents have provided extensive volunteer services to the Follow Through program. They have also visited their children's classrooms more frequently than non-Follow Through parents (see Table 4-5) and have taken part in home teaching sessions designed to help them enhance their

Table 4-18

Riverton
WRAT Mean Scores, Grade Equivalents, and National Norms for Jefferson and St. Stephen's Schools, for 1971-72 and 1972-73

		FALL, 1971										SPRING, 1972									
			Reading			Spelling			Math				Reading			Spelling			Math		
School	Grade	N	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	N	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.
St. Stephen's	K	29	11	.2	.1	11	.3	.1	9	.2	.1	29	16	.6	.8	18	1.0	.8	15	.9	.8
	1	20	20	.8	1.1	20	1.2	1.1	16	1.0	1.1	20	30	1.5	1.8	22	1.4	1.8	19	1.6	1.8
	2	28	24	1.2	2.1	24	1.6	2.1	19	1.6	2.1	28	52	3.1	2.8	32	2.7	2.8	26	2.8	2.8
	3	30	45	2.5	3.1	29	2.3	3.1	24	2.4	3.1	30	52	3.1	3.8	34	3.0	3.8	26	2.8	3.8
Jefferson	K	27	12	.3	.1	10	.2	.1	10	.3	.1	28	19	.8	.8	16	.8	.8	14	.7	.8
	1	35	19	.8	1.1	13	.5	1.1	15	.9	1.1	34	38	2.0	1.8	24	1.6	1.8	20	1.8	1.8
	2	32	39	2.1	2.1	24	1.6	2.1	21	1.9	2.1	32	49	2.8	2.8	31	2.6	2.8	26	2.8	2.8
	3	38	50	2.9	3.1	30	2.5	3.1	25	2.6	3.1	38	57	3.9	3.8	34	3.0	3.8	30	3.9	3.8

		FALL, 1972										SPRING, 1973									
			Reading			Spelling			Math				Reading			Spelling			Math		
School	Grade	N	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	N	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.	Mean Score	Mean G.E.	Natl. Norm G.E.
St. Stephen's	K	28	9	.1	.1	11	.3	.1	7	.8	.1	30	19	.8	.8	20	1.2	.8	14	.7	.8
	1	34	22	1.0	1.1	21	1.3	1.1	16	1.0	1.1	34	40	2.1	1.8	27	2.0	1.8	20	1.8	1.8
	2	23	36	1.9	2.1	20	1.2	2.1	25	2.6	2.1	23	44	2.4	2.8	20	1.2	2.8	29	3.6	2.8
	3	27	51	3.0	3.1	29	2.3	3.1	23	2.2	3.1	29	54	3.5	3.8	33	2.9	3.8	26	2.8	3.8
Jefferson	K	44	14	.4	.1	11	.3	.1	13	.6	.1	44	21	.9	.8	19	1.1	.8	17	1.2	.8
	1	43	20	.8	1.1	16	.8	1.1	14	.7	1.1	45	38	2.0	1.8	27	2.0	1.8	22	2.1	1.8
	2	45	36	1.9	2.1	25	1.7	2.1	22	2.1	2.1	43	49	2.8	2.8	31	2.6	2.8	26	2.8	2.8
	3	38	57	3.9	3.1	34	3.0	3.1	26	2.8	3.1	38	63	4.8	3.8	38	3.9	3.8	32	4.5	3.8

child's education using everyday materials found in the home. Following are some of the specific activities in which parents have been involved:

- attending study lessons at bi-weekly parent coffees to learn about the Follow Through program;
- making informal classroom visits and demonstrating hobbies or other skills;
- assisting with field trips;
- holding a year-end picnic for students and staff;
- making art materials for the classroom;
- assisting with playground supervision;
- organizing open houses and dinners;
- providing babysitters for parent meetings;
- sponsoring a dance recital;
- purchasing and administering the Toy Lending Library.
- supporting the home teaching program;
- supporting the Policy Advisory Committee (PAC).

The Policy Advisory Committee (PAC), which is composed of parents and other members of the community, met regularly during the 1972-73 school year and achieved improved parent support for its programs. Committees were formed to explore social and psychological services and program information dissemination. The chairmen of these committees gave regular progress reports to the PAC. Also during the past year, various committees were formed to set up programs to study curriculum and child development, to purchase innovative playground equipment, and to explore ways for even more parental classroom involvement. The PAC plays a substantial role in the planning and management of the Follow Through program and in the utilization of parents' skills and services.

Staff Development

Numerous opportunities for staff development exist in the Riverton-St. Stephen's Follow Through program. During the school year, weekly inservice training sessions are held for the teaching staff. Also, the Follow Through model sponsor field staff provide training materials and introduce new teaching techniques through workshops held during the year. Last year, seven teachers attended sponsor workshops held in Denver in the fall and in Ypsilanti in the spring. These staff members were then responsible for planning and conducting training sessions for their colleagues at home. In addition, St. Stephens staff members attended a bi-lingual, bi-cultural training session in Billings, Montana.

All in-house materials, such as bulletins from the Follow Through office and pertinent articles and books, were easily accessible and were regularly circulated to staff through the Follow Through Media Room and/or check-out area of the administrative office. Additional materials provided by teachers, aides and patrons were also available. A continuous effort has been made to update these types of materials.

Funds have been allocated specifically for use by teacher aides (especially parent aides) to further their educations. Twelve paraprofessionals have taken advantage of this program during the past year; several aides have taken classes at Central Wyoming College and others have completed work for the General Equivalency Diploma. No information was available on whether Follow Through certified teachers had enrolled in advanced degree courses or whether the paraprofessionals were working on teacher certification.

Influences of Follow Through on the Schools and Community

The Riverton-St. Stephen's Follow Through program has received tremendous acceptance by the parents, the teaching staff and the Board of Education. As indicated previously, there is a high degree of parent involvement in the Riverton-St. Stephen's Follow Through program. Parents like what they have seen in the Follow Through classrooms so much that they have expressed an interest in implementing the program in grades 4 through 6.

Communication between Follow Through and non-Follow Through staff is apparent from the discussions held between third and fourth grade teachers, model sponsor staff, and administrators concerning the transition of Follow Through pupils into the non-Follow Through fourth grade. As a result of these discussions, the third grade teachers have prepared their students for a more structured classroom environment, while at the same time fourth grade teachers have observed and worked in a Follow Through classroom to familiarize themselves with the program and procedures. In addition, Follow

Through staff bulletins are circulated to non-Follow Through staff to keep them informed of progress and changes in the Follow Through classrooms.

Efforts have also been made to involve the local and surrounding communities in the Follow Through program. Local Head Start parents have been invited to attend all Follow Through activities and the project director discussed the Follow Through program at the district Head Start meeting in Thermopolis. As mentioned earlier, Follow Through staff members also conducted a math training session for 26 Thermopolis teachers, participated in a Regional Education Fair in Cheyenne, and explained the Follow Through program to Montessori preschool parents.

Although 70% of the PAC members are parents involved in the Follow Through program, the rest of the PAC members are a random sampling of community leaders, resource people, and educators. Through the PAC, the local Follow Through program has created a better climate of partnership in which communication between the community and the school has been realized.

Summary

The Riverton-St. Stephen's Follow Through program has involved both staff members and parents more extensively in educational processes and has provided innovative educational experiences for the Follow Through children. Although control children generally scored better on the MAT than Follow Through children, the Follow Through children used for the comparisons had experienced an erratic rather than a continuous Follow Through education and had attended Follow Through classrooms during a period of poor program implementation caused by administrative difficulties. Those with continuous Follow Through experiences performed at or near their appropriate grade levels according to national norms on the WRAT. More MAT comparison data on children with adequate and continuous Follow Through experiences will help to clarify these results.

CHICAGO

Chicago was selected as a site for a Follow Through project in 1969. That same year, Howland and Lathrop schools selected High/Scope Educational Research Foundation as their Follow Through model sponsor. These two neighborhood schools are located about two blocks apart in the Lawndale community on Chicago's west side. Lawndale is a predominantly black residential area and all of the children in both schools are black. Typical parent occupations include construction, factory, and domestic work. A feeling of political and social powerlessness is evident in this community due to economic disadvantages which have produced high crime, continual vandalism of school property, and inadequate conditions for public health in the neighborhood. Lawndale is also part of a Model Cities project, and there has been some demolition of older buildings and reconstruction going on in the area. As a result, the schools have lost children and will continue to lose them until some of this area is rebuilt.

The Follow Through program began in 1969-70 with two kindergarten classes at each school so that by 1972-73 each school had eight Follow Through classrooms: two kindergartens, two first grades, two second grades, and two third grades.

Comparability of Follow Through and Control Children

The control children are from the non-Follow Through classes at Howland and Lathrop schools. These children live in Lawndale, as do the Follow Through children, and are predominately from low income families. Seventy-five percent of the Follow Through children participated in Head Start or had some preschool training; most of the control children did not. It is unclear how many children have left either Follow Through or non-Follow Through classes during these four years due to the demolition of homes. The schools report a 25% turnover rate for both Follow Through and non-Follow Through classrooms, which is comparable to the city's overall turnover rate. There are no achievement data from either school which could be used to further assess the comparability of the Follow Through and control children.

Ancillary Services

At the beginning of the year, an extensive health survey was made for each Follow Through child in kindergarten through third grade. At that time, hearing, vision, innoculation, medical, and dental records were reviewed for every child in order to determine the need for future screening and followup care. Follow Through children received innoculations against DPT, polio, regular and German measles. Children also received physicals and other medical services at local clinics and dental treatment from the Howland School dentist.

During the year, the Follow Through teacher-nurse held conferences on health problems and related matters with principals, teachers, school community representatives, parents, and children. She also discussed health services at Project Policy Advisory Committee meetings during the course of the year. Health information, booklets, and posters were made available for the parents in the Follow Through parent room in each school. In addition, health materials from community agencies and local businesses were distributed to all Follow Through children and their families.

In conjunction with the Model Cities program, the Board of Education provided a free breakfast and lunch program for all Follow Through children in both schools. A nutrition aide in each school prepared and served a morning and/or afternoon snack for all Follow Through children, introducing them to a wide variety of snacks which are high in nutritional value. Teachers and teacher aides ate with the children at lunchtime to encourage the children to eat the balanced lunch provided and to promote mealtime social learning experiences.

The nutrition aides also participated in a nutrition education program set up in cooperation with the University of Illinois Cooperative Extension Service home economics advisor. They brought ideas discussed in these meetings to the parent meetings and worked with the teacher-nurse to set up a nutrition education program for all Follow Through children.

In the area of social services, the school-community representatives in the Follow Through schools served as liaisons among the school, the home, and the local social service agencies. They made referrals to these agencies and to individual resource people like the adjustment teacher and coordinated followup services when needed. They also provided newsletters, flyers, and booklets to aid parents in locating needed services. In addition, the school-community representatives informed the teacher-nurse of potential health hazards and accompanied her on home visits.

Psychological services were provided by the Board of Education as part of its special services to pupils in Follow Through and non-Follow Through schools. Services were provided by the Children's and Adolescents' program of the Illinois Department of Mental Health. They included IQ testing and diagnosis of emotional and learning difficulties, consultations with teachers concerning test results and treatment recommendations, referrals of children and parents to community mental health and other health resources, and coordination of total evaluations and treatment by a psychologist, psychiatrist, and social worker.

Instructional Component

One teacher and one aide comprised the teaching staff in each Follow Through classroom for every school year, except 1970-71 when there were one teacher and two aides per classroom. In addition to the paraprofessional aides, parents and community members also volunteer as classroom aides (see Tables 6-1 and 6-2) and Lathrop school has one full-time volunteer aide in each Follow Through classroom. The Follow Through classrooms, by having at least one aide per teacher, are able to involve the aides as an integral part of the program since they work closely with the teacher within each classroom. The Follow Through staff also includes one project coordinator, two curriculum assistants (CAs), one teacher-nurse, and one home visitor aide.

As can be seen in Tables 6-1 and 6-2, these differences in staffing patterns result in lower adult-pupil ratios in the Follow Through classrooms, making possible much individualized instruction and supervision of small groups or individual children. Both schools in Chicago, in the last year, have modified the Cognitively Oriented Curriculum model somewhat in assigning children to different classrooms with different teachers for specific activities, such as language, arithmetic, or music. A low adult-pupil ratio has enabled this more structured system to remain flexible and continue to provide for individual attention and small group interaction. The non-Follow Through classroom style remains somewhat inflexible in that a teacher must be responsible for the entire class without the assistance of an aide for at least a part of a day.

Table 6-3 shows teacher absence figures for Follow Through and non-Follow Through classrooms in both schools for the past year and in Lathrop School for previous years. Teacher absence rates have been comparable with the exception of a

Table 6-1

Chicago
Staffing Patterns for Lathrop and Howland Schools, Follow Through

		LATHROP SCHOOL							HOWLAND SCHOOL					
Year	Grades	No. Class-rooms	No. Teach-ers	No. Aides	No. Parent Aides	No. Volunteer Aides	Enroll-ment	Adult-Pupil Ratio	No. Class-rooms	No. Teach-ers	No. Aides	No. Parent Aides	Enroll-ment	Adult-Pupil Ratio
1969-70	K	2	2	2	2	*	50	1:13	2	2	2	2	50	1:13
1970-71	K-1	4	4	6	4	*	90	1:11	4	4	8	7	94	1:8
1971-72	K-1-2	6	6	6	6	6	141	1:8	6	6	6	5	137	1:11
1972-73	K-1-2-3	8	8	8	8	8	191	1:8	8	8	8	7	181	1:11

*Information not available

Table 6-2

Chicago
Staffing Patterns for Lathrop School†, Non-Follow Through

Year	Grades	No. Classrooms	No. Teachers	No. Aides	No. Parent Aides	No. Volunteer Aides	Enrollment	Adult-Pupil Ratio
1969-70	K	4	4	*	*	0	111	1:28
1970-71	K-1	11	11	11	*	0	312	1:14
1971-72	K-1-2	13	13	7	4	0	283	1:14
1972-73	K-1-2-3	14	14	8	3	0	345	1:16

†Incomplete data from Howland School

*Information not available

Table 6-3

Chicago
Teacher Absences in Follow Through and Non-Follow Through Classrooms

Year/School	FOLLOW THROUGH			NON-FOLLOW THROUGH		
	No. Teachers	No. Days Absent	Mean No. Days Absent	No. Teachers	No. Days Absent	Mean No. Days Absent
1969-70						
Lathrop	2	10.0	5.0	4	24.0	6.0
*						
1970-71						
Lathrop	4	54.5	13.8	11	115.5	10.5
*						
1971-72						
Lathrop	6	83.0	13.8	13	132.5	10.2
*						
1972-73						
Lathrop	8	214.5	26.8	14	137.5	9.8
Howland	8	79.5	9.9	15	153.0	10.2

*Howland figures not available.

particularly high number of absences among Lathrop Follow Through teachers during the 1972-73 school year. Figures on teacher turnover were not available.

Figures on staff involvement in after-hours work were available only for the 1972-73 school year. At Howland School, both Follow Through and non-Follow Through staff spent approximately five hours per week per teacher in work-related activities beyond the school day. At Lathrop School, on the other hand, Follow Through staff have been involved in such activities to a greater extent than non-Follow Through staff (1,206 volunteer hours for Follow Through staff members vs. 121 volunteer hours for non-Follow Through staff).

Parents and other community members also volunteer their services in the Follow Through classrooms. During the 1972-73 school year, 4,021 volunteer hours were contributed to Follow Through classrooms at Howland School; at Lathrop School slightly over 14,000 volunteer hours were recorded for each of the past two years. The large number of volunteer hours at Lathrop School reflects the presence of a full-time volunteer aide in each Follow Through classroom. Numbers of volunteer hours are much lower in non-Follow Through classrooms.

Effects on the Child

Attendance, retention, and special education. Follow Through and non-Follow Through children's attendance figures are shown in Table 6-4. Lathrop School's figures show attendance generally increasing for Follow Through students from 1969 to 1973, and decreasing for non-Follow Through students over the same period. In 1972-73, Follow Through children had better attendance records than non-Follow Through children, with attendance ranging from 76.6% to 88.7% for Follow Through children and 71.6% to 78.7% for non-Follow Through children. Howland School's attendance was better than Lathrop School's this past year with Follow Through and non-Follow Through children having equally high attendance rates.

Due to the Continuous Development Program in Chicago, no children are retained before the third grade. There are Special Education classes at Howland School, but no records are available to determine the number of Follow Through or non-Follow Through children who attend these classes.

Achievement test comparisons. The achievement data from Chicago consists of fall 1970 and fall 1971 scores for the Metropolitan Readiness Test (MRT) from Howland School first graders. The MRT attempts to evaluate a child's readiness for learning by assessing linguistic attainment and aptitudes,

Table 6-4

Chicago
Attendance Rates in Follow Through and Non-Follow Through Classrooms in Howland and Lathrop Schools

Year	Grades	Lathrop School				Howland School			
		FOLLOW THROUGH		NON-FOLLOW THROUGH		FOLLOW THROUGH		NON-FOLLOW THROUGH	
		Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance
1969-70	K	50	92.2	111	91.4	---	*	---	*
1970-71	K	45	82.8	140	78.0	---	*	---	*
	1	45	83.8	172	85.9	---	*	---	*
1971-72	K	49	78.7	90	77.3	---	*	---	*
	1	43	80.4	92	83.8	---	*	---	*
	2	49	87.8	101	79.0	---	*	---	*
1972-73	K	50	84.3	57	71.6	46	91.8	76	92.5
	1	43	88.2	88	78.7	45	92.0	98	92.1
	2	49	76.6	90	72.2	46	92.1	94	92.1
	3	49	81.3	110	78.2	40	91.4	80	92.1

*Figures not available.

visual and auditory perception, muscular coordination and motor skills, number knowledge, and ability to follow directions and pay attention to group work. This test is usually given at the end of kindergarten or the beginning of the first grade.

A one-way analysis of variance was done to compare the Follow Through and non-Follow Through MRT scores. For the fall 1970 testing, the Follow Through children scored significantly better than the non-Follow Through children. The mean score for the Follow Through children was 58.5 compared to 45.0 for the non-Follow Through group ($F = 9.2105$; $df = 1, 53$; $p < .01$).

The Follow Through first graders tested in fall 1971 also scored higher than the non-Follow Through children on the MRT, but the difference in socres was not significant. The Follow Through mean was 63.1 compared to the non-Follow Through mean of 60.4 ($F = .6638$; $df = 1, 68$; $p = N.S.$).

These results show a tendency for children with a Follow Through kindergarten experience to be better prepared for the first grade. It would be valuable to have more scores available from Lathrop as well as Howland School and from years prior to 1971 to develop a more complete picture of the effects of Follow Through and non-Follow Through educational experiences in Chicago.

Parent Involvement

There are four general areas in which parents participate in the Chicago Follow Through program:

- participation in the process of making decisions about the nature and operation of the project through frequent meetings of a Project Policy Advisory Committee and local steering committees;
- participation in the classroom and school as volunteers, observers, or paid employees;
- participation in regular home visits by Follow Through staff;
- participation in parent educational and community activities.

The Project Policy Advisory Committee (PPAC) consists of ten parent delegates from Lathrop and Howland schools. Staff and community delegates serve as nonvoting members. This committee has been active in recruiting parents for the volunteer program, selecting representatives to attend sponsor workshops, securing funds for steering committee activities, developing criteria for hiring parents as paraprofessionals, involving parents in children's outdoor camping activities, disseminating a newsletter, working to reestablish funding for the project defunded under a budget squeeze in 1972, and developing the 1973-74 continuation proposal for the project.

Lathrop and Howland schools each have a local steering committee that meets monthly. The steering committees are composed of the Follow Through parents at each school and average 15 parents per meeting. The meetings serve to keep parents in touch with new developments in the project and provide an opportunity for them to plan, discuss issues, and make suggestions and recommendations to the Project Policy Advisory Committee and project administration. Each steering committee develops, organizes, and implements parent activities at the local school. Such activities include selecting paraprofessional staff, sponsoring parent-child field trips, disseminating newsletters to parents and community agencies, and participating in the development of the Follow Through proposal.

During the past year, the Lathrop School steering committee has organized consumer education classes, a sewing club, and a fund-raising committee; secured containers for student lunches and rugs for classroom floors; and participated in orientation workshops conducted by the CA and home group workshops conducted by the community aide. The Howland School steering committee has organized a sewing and knitting club, successfully maintained a year-round volunteer program involving 80 parents, and sponsored a parent volunteer recognition program at the end of the school year.

As mentioned earlier, parents have contributed an extensive number of volunteer service hours to the Follow Through program. They have also visited their children's classrooms more frequently than non-Follow Through parents. Howland School reported an average of six parents visiting the eight Follow Through classrooms per day and two parents visiting the 15 non-Follow Through classrooms per day during the 1972-73 school year.

Staff Development

Both professional and paraprofessional staff attended a series of orientation and training sessions at the beginning of the school year to further their knowledge of the Cognitively Oriented Curriculum. In addition, weekly inservice training sessions were held at each school throughout the school year. At Howland School, these sessions generally focused on reading and curriculum development with two special sessions devoted to the use of museums and the lunchroom environment. At Lathrop School, Follow Through staff members volunteered time for training sessions held after school in addition to attending planning, coordination, and evaluation inservice meetings scheduled during regular school hours. In April, a special workshop on the use of TABA social studies materials was held for the Lathrop Follow Through staff. Both Howland and Lathrop schools have a teacher and an aide to release classroom teachers and aides for joint planning sessions with the CAs.

Besides inservice training, classes are available to all professionals at the local colleges and universities for work toward professional training or advanced degrees. To determine the interest of paraprofessional staff in furthering their educations, a survey was conducted by a citywide career development committee comprised of delegates from each Follow Through school. This committee, which met monthly, then investigated the availability of free or inexpensive programs for paraprofessional educational advancement at local colleges and universities and shared the information obtained with the local Follow Through schools. However, there are no data available on the number of paraprofessionals who profited from this program.

Influences of Follow Through on the Schools and Community

Howland and Lathrop schools have used several inservice meetings to orient non-Follow Through personnel to the Follow Through program. Non-Follow Through teaching staff are welcome to visit Follow Through classrooms and several have taken advantage of this invitation.

The Follow Through program has also contributed in a variety of ways to the surrounding community:

- provided jobs in a community of high unemployment;
- provided educational opportunities for career advancement;
- provided a focal point of parental organization and activity;
- provided medical, nutritional, dental, social, and psychological services to low income children and, in part, to their families;
- provided channels for communication among parents, the school, and community agencies.

With regard to the last point, the school-community representatives keep a calendar of events for the Lawndale community where the two Follow Through schools are located. In addition, the steering committees publish and share newsletters on a citywide basis describing the Cognitively Oriented Curriculum of the Follow Through project.

In turn, the community has responded favorably to Follow Through, most notably in services rendered by community agencies. To cite a few examples, the Greater Lawndale Conservation Committee and the Urban Progress Center rendered assistance in alleviating housing problems of parents from Lathrop School; the National Livestock and Meat Board supplied nutrition kits for all Follow Through children in second grade; and the Milk Foundation, American Medical Association, American Dental Association, and Cook County Food Program have distributed health materials to Follow Through parents, nutritional aides, and children during the past school year.

Summary

The Chicago Follow Through program has provided children with both innovative educational experiences and needed nutritional, medical, social, and psychological services. It has also involved the adults of the community to such an extent that both staff members and parents have volunteered large amounts of time to make the program a success. The only achievement data available indicate that first graders with Follow Through kindergarten score better on the MRT than those with non-Follow Through kindergarten; however, there are no pretests to check the groups' comparability. More data from other grades are needed to show whether these achievement differences are maintained.

DENVER

The city of Denver is located at the base of the Colorado Rocky Mountains and is the state capitol of Colorado. With a population of over 500,000, Denver is both a sprawling metropolis and the largest city in Colorado. In the spring of 1970, Denver was selected as a Follow Through site by HEW. At that time, High/Scope Educational Research Foundation, with its Cognitively Oriented Curriculum, was selected as the model sponsor for the Denver Follow Through program located in Garden Place and Gilpin elementary schools on the north side of the city. In order to provide more instructional space at Garden Place School, a small annex building within walking distance of the school was leased two years ago (Garden Place Annex).

Approximately 80% of the Follow Through children come from low income families. Fifty-six percent of the children are Hispano, 28% are black, and the rest are white. When Follow Through was first implemented in Denver the program served approximately 240 children; presently it serves 360 children.

During the first year of the program there were eight Follow Through classrooms with four kindergartens and four first grades. In 1971-72, four second grades were added to the program, bringing the total number of classrooms to twelve. This past year, this number was maintained as kindergarten classrooms* were phased out of the program and four third grade classes were added.

Comparability of Follow Through and Control Children

Due to the closing of school for vacation and the political situation at the time, very little information was available for comparison purposes. Non-Follow Through children at Gilpin

---

*School administrators felt it was more appropriate to have one consistent kindergarten program rather than a variety of models. Since federal input into the Follow Through program was scheduled for reduction in 1973-74 under the five-year proliferation plan, school officials decided to phase kindergarten out one year early.

School were used as a control group for attendance rate comparisons. These children are of the same ethnic composition as children in the Follow Through classrooms but may come from families whose income levels are slightly higher. More specific information on these children was not available. Children at Ashland and Fairview schools were used for achievement test comparisons. These children are also low-income and predominantly Hispano or black, but again more specific information was not available. As far as can be determined, these children comprise adequate control groups, but this conclusion is based on limited information.

Ancillary Services

The Denver Follow Through program provides funds for medical, dental, nutritional and psychological services for Follow Through children. Specific figures on medical and dental care were available only for Gilpin School. Since 1970, 81 Follow Through children at Gilpin School have received physical examinations. Also, approximately 80-90 Follow Through children have been treated at the Curtis Park Neighborhood Health Center near the school. This past year the school nurse, parent aide, and dentist conducted five sessions on hygiene instruction for Follow Through parents and children.

In addition to medical treatment, the Follow Through program provides extensive dental services. During 1972-73, 133 Gilpin students were examined and received complete dental treatment. Services included diagnostic and preventive care, oral surgery, restorations and crowns. The Follow Through parent coordinator and parent aide scheduled dental appointments and provided transportation for children when necessary. At Gilpin School alone, 40 dental kits were used by Follow Through children this past year.

The Follow Through nutritional program covers a wide range of activities. Each child in the program receives a hot lunch plus two snacks a day. Milk and crackers are served in the morning and fruit (in season), canned fruits, jello, or pudding are served in the afternoon. There is also a breakfast program at both schools for children whose parents desire their participation. In addition, cooking activities are a part of instructional classroom time and consultants from Colorado State University have conducted nutrition classes for children and staff members at Garden Place Elementary School.

Denver Follow Through exerts a concerted effort to use available community service agencies. During the 1972-73 school year, 38 community agencies provided services to Gilpin Follow Through children. A school-community aide has worked closely with a social worker in assisting parents with attendance, financial and behavioral problems. In 1972-73, 59 referrals for social worker assistance and seven referrals for psychological testing were made at Gilpin School. No information on social/ psychological services was available from Garden Place Elementary School.

Instructional Component

Denver Follow Through classrooms have been staffed with one teacher and two teacher aides since the beginning of the program. In addition, a release team consisting of one teacher and two teacher aides enabled each regular classroom team to spend one-half-day for planning purposes every sixth day of the 1972-73 school year. A curriculum assistant (CA) helps with planning, sponsor model clarification, and teacher training at each school. Of the 28 paraprofessionals employed by Follow Through during the 1972-73 school year, 11 were parents of Follow Through children, seven were community residents, and ten were noncommunity residents. Non-Follow Through classrooms, on the other hand, are staffed with one certified teacher and have no teacher aides, CAs, or release team assistance, except for occasional use of teacher aides from the Denver Public Schools.

These differences in staffing patterns have resulted in much lower adult-pupil ratios in the Follow Through classrooms, as can be seen in Table 7-1. Such ratios make possible the small group and individual instruction typically found in Follow Through classrooms.

Follow Through staff turnover has remained low for the three years the program has been in existence. Denver Follow Through employed 32 teachers from the fall of 1970 to spring, 1973 and during this time only four staff members left the program. Two teachers moved from the district, one was reassigned as a CA, and the fourth chose to teach in a different school. Information on non-Follow Through staff turnover and Follow Through and non-Follow Through teacher absenteeism was not available.

In addition to participation in activities during school hours, Follow Through staff members have also been involved in out-of-school activities involving Follow Through families (e.g., potluck dinners, carnivals, holiday programs, picnics, parent conferences, and coffees).

Table 7-1

Denver
Adult-Pupil Ratios
for Follow Through and Non-Follow Through Classrooms

Year	Grades	FOLLOW THROUGH	NON-FOLLOW THROUGH
1970-71	K-1-2	1:10	1:27*
1971-72	K-1-2-3	1:9	1:27*
1972-73	K-1-2-3	1:8	1:27*

*Estimated

Although staffing patterns, staff turnover, and teachers' out-of-school activities are important to the success of a Follow Through program, the instructional environment and emotional tone of a Follow Through classroom also indicate the success of model implementation. Teachers and aides play a vital role in this setting, since together they encourage and promote the child's thinking skills, powers of reasoning and ability to communicate with others--all essential components of the Cognitively Oriented Curriculum model. Denver Follow Through classrooms exhibit many characteristics of successful model implementation. Children make their own plans and carry them through to completion. Teachers and aides help the children review and represent their plans and activities in various ways--by participating in group discussions, dictating and writing stories, role playing, and so on. These activities enable children to evaluate their own work and to communicate their feelings about what they have learned and how they have learned it.

Thus, the child in Denver Follow Through classrooms is viewed as an individual by teachers and aides, who help him work at his own pace and at his own developmental level, providing opportunities for him to fully develop his thinking, communication and academic skills.

Classroom design, materials and equipment are utilized to enable Follow Through children to become actively involved in this learning process. Following is a list of items used by children and teachers in Denver Follow Through classrooms (most of these items are not used in non-Follow Through rooms):

- Record players
- Carpeting
- Rocking chairs
- Primary typewriters
- Cassette recorders
- Film-sound projectors
- Videotape recording units
- Laminating press
- Overhead projectors
- Polaroid and instamatic cameras

The Denver Follow Through program uses all available instructional space to encourage the child's active involvement with real places, objects and people. The gyms are used for physical education; lunchrooms and kitchens for cooking activities; auditoriums for programs; and parks and playgrounds for physical education, exploration, math and science activities.

Field trips are another essential aspect of active exploration and real experiences for Follow Through children. During the 1972-73 school year, 73 field trips were taken by Follow Through children. Some of the field trips were local, including visits to food stores, service stations, libraries, the post office, bakeries, museums, shopping centers, and other schools. Other trips involved traveling as much as 150 miles. Some of these included visits to the Hall of Presidents and the Cheyenne Mountain Zoo, both in Colorado Springs, Colorado, and to the Genessee Mountain Park near Denver.

Effects on the Child

Attendance, retention, and special education. Very little information was available concerning the effects of the program on Follow Through children as compared to control (non-Follow Through) children. Some data were available on attendance rates at Gilpin School. As can be seen in Table 7-2, attendance rates for Follow Through children at Gilpin School have been consistently higher than those for non-Follow Through children during the past two years. Thus, it appears that the Follow Through program has in some way favorably affected the motivation of children and/or parents with regard to school attendance.

Achievement data. The only achievement data available for both Follow Through and non-Follow Through children were the results of a 1970-71 mid-year administration of the Boehm Test of Basic Concepts to kindergarteners from Gilpin and Garden Place schools (Follow Through), and Ashland and Fairview schools (non-Follow Through). These were collected to evaluate a local program for low-income children. Small samples of Follow Through participants were included at the request of the local Follow Through director.

The Boehm test was designed to assess young children's understanding of very basic concepts that often appear in the verbal directions for various school activities. Those concepts can be divided into the categories of space (top, bottom), quantity (as many, first), and time (beginning, after).

Group scores from each school were reported, and so an analysis of individual scores was impossible. Table 7-3 shows the distribution of Follow Through and non-Follow Through scores according to low and middle SES national norms. Seventy-five percent of Follow Through children (80% of whom come from low-income families) scored above the 55th percentile of the low SES norms. Those same scores, when compared to middle SES norms, place 59% of the Follow Through children above the 55th percentile. Seventy-one percent of the non-Follow Through kindergarteners scored above the 55th percentile of the low SES

Table 7-2

Denver
Attendance Rates in Follow Through and Non-Follow Through Classrooms at Gilpin School

		FOLLOW THROUGH		NON-FOLLOW THROUGH	
Year	Grades	Number Enrolled	Percent Attendance	Number Enrolled	Percent Attendance
	K	39	88.3	39	82.4
1971-72	1	44	89.9	44	89.2
	2	39	89.3	39	86.7
	1	36	88.6	36	84.2
1972-73	2	40	89.4	37	76.2
	3	46	90.9	23	89.3

Table 7-3

Denver
1970-1971 Mid-year Results on the Boehm Test of Basic Concepts for Kindergarten Pupils - Follow Through and Non-Follow Through Schools

		Percentage Scoring in Various Percentile Bands Based on Test Norms							
		Low Socioeconomic Percentile Norm				Middle Socioeconomic Percentile Norm			
School	N	Below 25	25-50	55-75	80 & Above	Below 25	25-50	55-75	80 & Above
FOLLOW THROUGH									
Gilpin	16	6	31	19	44	38	25	31	6
Garden Place	16	6	6	0	88	13	6	31	50
TOTAL	32	6	19	10	65	25	16	31	28
NON-FOLLOW THROUGH									
Ashland	15	13	20	27	40	33	33	7	27
Fairview	16	6	19	25	50	25	38	6	31
TOTAL	31	10	19	26	45	29	36	6	29

norms, and 35% scored above the 55th percentile on the middle SES norms.

Both Follow Through and non-Follow Through children compared quite well with the low SES national norms. The Follow Through children appear to compare somewhat better than the non-Follow Through children to the middle SES norms, with more children scoring between the 55th and 75th percentiles. However, whether these differences were the result of the Follow Through program cannot be determined due to a lack of pretests or other information about the comparability of the two groups.

Parent Involvement

One of the most important aspects of the Follow Through program is the effort made to encourage and maintain parent involvement in the classroom and in other, nonschool-related activities. The Follow Through parent coordinator schedules social and school activities for parents, provides information for them on various aspects of the Follow Through program, and directs the parent educational program. As mentioned previously, paid parent aides assist in the Follow Through classrooms. In addition to the paid aides, there were many other parents who volunteered their time and assistance last year. During the 1972-73 school year, 397 parent visits were made to Follow Through classrooms and many parents also assisted in out-of-school activities. Information on parent participation in non-Follow Through schools was not available.

Examples of program activities which involved Follow Through parents in 1972-73 are:

- Twenty-four parents went on field trips.
- Twenty-five parents bound books written by Follow Through children.
- Parents assisted children with cloth painting, sewing, reading, making potholders, and building projects.
- Parents were involved in proposal writing sessions.
- Parents regularly attended Policy Advisory Committee (PAC) meetings.
- Approximately 65 parents were involved in painting the Garden Place Annex. This was a parent-initiated activity based on a desire to clean up and brighten

their children's school building.

- Approximately 34 parents assisted the parent coordinator in providing transportation for children to and from dental appointments.
- Approximately 82 parents were involved in home visits. These visits were made by the parent coordinator and parent aide. Many of the 82 parents were contacted more than once, since 156 visits were actually made.
- Approximately 62 parents were involved in various school meetings, including workshops, and conferences.
- Five parents attended the Title I Conference on Parent Involvement in Denver.
- Sixteen parents were involved in a conference sponsored by the State Department of Education titled "Young Children in Colorado".
- Four parents attended planning meetings for a workshop, "Title I Parent Involvement".
- Approximately 40 parents attended a series of Gilpin School workshops where they made learning games for their children.
- Parents interviewed applicants for positions as release team teachers and aides.
- Three parents were employed as school aides in the cafeteria and school offices.
- A variety of field trips, potluck dinners, learning activities, and craft classes were set up by and for parents.
- Parents organized classroom parties and costume-making sessions for various programs and skits.

Many Follow Through parents have also become involved with community organizations. Parents have participated in Head Start and local Boy Scout programs, have served on the board of a local Housing Project, and have taken leadership roles in the Parent Teacher Association.

Staff Development

There are numerous opportunities for staff development in the Denver Follow Through program. Both teachers and aides are involved in degree-granting programs. Some teachers have enrolled in Master's programs and have taken such courses as Spanish Culture, Chicano Studies, Teaching Children with Learning Disabilities, Teaching Reading to Minorities, and The Open Classroom.

Aides have enrolled in various undergraduate classes and other training programs:

- One aide has taken 12 hours of undergraduate studies, working toward a B.A. in music.
- Seventeen teacher aides attended a series of ten classes conducted by personnel from the University of Northern Colorado in Greeley, Colorado. (North East Board of Cooperative Educational Services, aide training program.)
- The parent coordinator has taken numerous classes at Metropolitan State College, Denver.

In addition to formal coursework, there are many onsite staff training sessions. CAs work closely with Follow Through teaching teams to further the implementation of the Cognitively Oriented Curriculum model. During 1972-73, the CAs held various workshops for teachers and aides at both Gilpin and Garden Place elementary schools. High/Scope Foundation field staff have also conducted inservice training workshops for Follow Through staff. Reading, art, math, concepts of classification, interest centers, program goals, Piagetian theory, and discussions of nonstandard English are some of the topics covered by both CAs and High/Scope staff. According to information received from site personnel, the majority of workshop participants found the sessions useful and informative. High/Scope Foundation staff also conducted workshops at their offices in Ypsilanti, Michigan, and have provided the Denver program with additional training materials designed by the field staff. In addition, Denver Follow Through staff hosted two High/Scope regional workshops for Follow Through staff members from Seattle, Washington; Trinidad and Greeley, Colorado; and Riverton, Wyoming.

Also, plans are being made to establish a model classroom patterned after High/Scope Foundation's Traning and Development

Center, to be located at the Garden Place Annex. The classroom will provide staff training and development, serve as a workbench for the development of program and training materials, and function as a model of classroom implementation. The classroom will be staffed with one teacher and two aides. The student population will be a multi-age group consisting of first, second, and third grade pupils. Follow Through program staff have scheduled a week-long training session in Ypsilanti, Michigan, at the High/Scope Training and Development Center in mid-September, 1973, for the teaching team of the new Denver Model classroom and the CAs.

Influence of Follow Through on the Schools and Community

Several non-Follow Through teachers have become involved with the Follow Through Cognitively Oriented Curriculum model. This is evidenced by one non-Follow Through teacher who used Follow Through materials and techniques in her classroom and another non-Follow Through teacher who attended Follow Through workshops. Also, site personnel note that ongoing communication exists between Follow Through and non-Follow Through teachers. According to project staff, numerous requests to visit Follow Through classrooms to observe have been received from teachers within the two Follow Through schools as well as teachers from other schools in the district.

The influence of the Follow Through instructional component on grades 4-6 has also been evident. Fifth and sixth grade teachers at Garden Place School have met with High/Scope consultants and the CA to discuss techniques used in Follow Through classrooms and these teachers have implemented many of these concepts in their classrooms.

During the 1972-73 school year, meetings were held with non-Follow Through fourth grade teachers at Garden Place and Gilpin schools who will have Follow Through third graders in their classrooms this coming year for the first time. The purpose of these meetings was to aid teachers in helping students adjust to a non-Follow Through classroom. At Garden Place School a two-day workshop was conducted in which fourth grade teachers visited Follow Through third grade classrooms for one day. This was followed by a work session. The next day, High/Scope consultants and CAs worked with the fourth grade teachers and children in their rooms. Plans have been made to continue working with these teachers next year. At Gilpin School, teachers will be assisted as they implement a Career Awareness Program with their children. Plans call for many Follow Through techniques to be employed in this program.

The Follow Through program has also influenced other groups in the community:

- Follow Through parents and staff members have hosted visitors from area colleges in the classrooms.
- The project coordinator and CAs have made presentations to students in area colleges.
- As a result of a speech by the project coordinator, the future Teachers of America Club at the Thomas Jefferson High School visited Follow Through classrooms.
- Approximately ten Follow Through classes have visited non-Follow Through classes.
- The parent group gave a presentation concerning the Follow Through program to the school board.
- A representative from Model Cities has attended many Follow Through parent functions.
- School administrators have visited Follow Through classrooms.
- Local firms have donated materials to be used in Follow Through classrooms.

These various activities are concrete examples of the Denver Follow Through program's impact on the community. In addition, local businessmen, representatives from Denver's Model Cities Project, representatives from local interest groups, and religious leaders have all visited Follow Through classrooms.

To further facilitate communication, local project staff have published Follow Through feature articles in the Denver Post and exhibited Follow Through materials at the Colorado PTA Convention, ACE Workshop, and Parent Conferences sponsored by the State Department of Education.

Summary

Although only a limited amount of comparison data was available from the Denver Follow Through program, it is evident that staff members, parents, and children have all become enthusiastically involved in this innovative educational program. Because no data were available, nothing can be said about the effects of the Follow Through program on children's achievement in grades 1 through 3. The limited data available on the Boehm Test indicated that Follow Through kindergarteners were performing adequately with respect to both low and middle SES national norms. Hopefully, more specific data on both Follow Through and control children will be available for future reports.

SECTION 3

ASSESSING THE WRITING OF ELEMENTARY SCHOOL CHILDREN: THE DEVELOPMENT OF A PROCEDURE AND PRELIMINARY FINDINGS

September, 1973

Prepared by

M. Elizabeth Couvares
John M. Love

High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

The research reported herein was performed pursuant to Grant No. OEG-0-70-4919 with the Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Point of views and opinions stated do not, therefore, necessarily represent official Office of Education opinion or policy.

Acknowledgments

The development of any assessment procedure requires the contribution of many individuals. The writing task developed at the High/Scope Foundation has truly been a cooperative effort. Throughout the 1972-73 school year, a long series of meetings was held involving teaching staff at the Training and Development Center, curriculum specialists and field consultants from the Follow Through staff, and research staff. Sheila Mainwaring, Alice Hudson, Charles Hohmann, Grace Hsu, Donna McClelland, and Carolyn Jackson were all deeply involved. Without their knowledge of the processes involved in the development of reading and writing, and especially their understanding of children, this project could not have been undertaken. More than any other single individual, however, this assessment procedure owes its existence to Dave Weikart, whose concern for finding ways that will allow children to demonstrate their competence has been a constant source of energy for the rest of the staff.

The pilot testing of the writing task was completed with the help of many individuals. The assistance of the project directors, curriculum assistants, teachers, and aides in Denver, New York and Seattle, is appreciated. They willingly took time from their busy schedules late in the year to assist with the administration of the writing tasks in their centers.

Jill Jackson and Mary Allan completed the scoring of the writing samples, Robert Hanvey completed the data analysis and Charles Hohmann provided valuable advice on scoring procedures. We are also indebted to Lynne Dermody, Jana von Fange, Gay Garcia and Beth Schoppa for their expert typing of tables and text.

INTRODUCTION

In light of recent literature on academic achievement tests and open education (DeRivera, n.d.; Grimmett, 1970; Meier, 1972), the suitability of standardized achievement tests for evaluating innovative programs in education has come into question. Undoubtedly the emphasis on "accountability" in education has given rise to the increased importance placed upon standardized achievement tests as the most readily available means of evaluating basic skills programs, particularly at the elementary level. By this insistence upon academic achievement tests as the primary means of evaluating various educational programs, however, these tests have served as a "counter-influence" to innovative instructional programs (DeRivera, n.d.). Neither the content of standardized tests nor the context in which they are administered has been in keeping with the goals and structure of open classroom settings.

The idea to analyze children's written compositions came about largely in response to the inadequacy of standardized tests to assess language arts skills of children enrolled in Follow Through Cognitively Oriented classrooms sponsored by the High/Scope Foundation. The structure of the environment (instructional context) as well as the ways children and teachers act and interact (instructional process) are intimately connected to the kinds of concepts and skills learned (instructional outcomes). In the Cognitively Oriented Curriculum, language arts skills are not taught in isolation, but integrated with all other instructional areas. A child is encouraged to develop and initiate activities, to engage in direct experience with objects, and to write on a daily basis to record his experiences and to communicate them to others. Writing requires that a child actively think about what he wants to communicate, order his thoughts and utilize the cognitive skills he already has. His ability to think--to categorize, describe relationships, show causality, make generalizations, etc.--should be reflected in the growing level of sophistication of his writing. Daily efforts at writing should help him develop a mastery of language usage closely linked to and in support of his intellectual and social development.

According to Blount (1973), instructional-learning variables have not been examined in ways that might affect

English/language arts classrooms. Analyzing children's writing, therefore, was viewed as an attempt to tailor an assessment procedure both to the objectives and situational demands of the Cognitively Oriented approach to teaching language arts. It was agreed that the context of assessment should mirror the kinds of behaviors occurring during the learning process and that the content of assessment should reflect a child's ability to effectively communicate his thinking and experiences to others. Love and Couvares (1973) have previously pointed out that learning is embedded in a particular context. When the testing situation alters that context, the "situational demands" on the learner are changed. Maintaining continuity of situational demands between the classroom learning setting and the assessment setting will increase the likelihood that the learned behaviors will actively be exhibited during the assessment process.

The purpose of this investigation was to develop a writing assessment procedure which would be appropriate for analyzing written products of young children. The criteria for analysis included specific content as well as indices of syntactic maturity. The subjects for the writing assessment were both second and third grade children enrolled in Follow Through Cognitively Oriented classrooms as well as second grade control children enrolled in non-Follow Through classrooms.

There were three steps in the development of the writing assessment procedure:

- Establishing criteria on which to judge compositions of second and third graders;
- Choosing an appropriate stimulus to elicit writing samples;
- Defining the context in which the writing samples were to be obtained, which would be in keeping with the context of an open classroom setting.

Establishing Criteria

A review of the literature found three broad criteria--mechanics, style and content--used most frequently in evaluating compositions of children (Anderson and Bashaw, 1968; Chittenden, 1970; Slotnick, 1972; and Veal and Biesbrock, 1969) and young adults (Follman and Anderson, 1967; Lyman, 1929; Radcliffe, 1972; and Stiff, 1967).

Procedures for scoring these criteria have varied widely. Since the purpose of this investigation was to develop a set of criteria which could describe a composition in fairly objective terms and which could be subject to statistical analysis, the decision was made to examine the above-mentioned criteria in essentially analytic terms. Each paper was thus scored according to a specified list of attributes with example statements indicating what each attribute should look like.

Writing Mechanics

Most teachers are concerned with writing mechanics (Slotnick, 1972). When asked to rank order particular concerns, teachers will frequently mention complete sentences, "correct" grammar, and conventional punctuation and paragraphing (Lyman, 1929; Veal and Biesbrock, 1969). It has been suggested, however, that the lack of certain skills, such as sophisticated punctuation in the writing of older children and adults, might indicate that "the development of such patterns may be more closely related to thinking ability than to writing construction" (Porter, 1972, p. 865). The primary concern of the present investigation was using an index of syntactic maturity in children's writing which could be quantified and which could "capture" fully developed language constructions, but which would not penalize children for certain proscriptive mechanical errors. (Mechanics is taught in the Cognitively Oriented Curriculum through an explanatory rather than proscriptive process, indicating to a child from what he writes just what each usage can do.) It was decided, therefore, not to be concerned with accuracy of spelling and punctuation, characteristics of different dialects or departure from adult norms in inflectional forms. Since two studies had already been done which validated an objective index of syntactic maturity (Hunt, 1965, 1970; O'Donnell, Griffin, and Norris, 1967), that procedure was followed here.

In searching for an index of syntactic maturity, Hunt (1965) coined the term T-unit or minimal syntactic unit. A composition could be segmented into these T-units without regard to punctuation while preserving all the subordination achieved by a child. He decided on

> minimal terminable units, since they would be minimal as to length and each would be grammatically capable of being terminated with a capital letter and a period (Hunt, 1965, p. 21).

According to Hunt (1970, p. 14), "The criterion for a T-unit was that it consists of one main clause plus whatever subordinate clauses and nonclausal expressions are attached to or embedded within it". The actual procedure of the present study was closest to that of O'Donnell et al. (1967), who defined a T-unit as

> a single independent predication together with any subordinate clauses that may be grammatically related to it. It may be a simple or a complex sentence, but not a compound sentence (p. 33).

O'Donnell's investigation supported the finding by Hunt (1965, 1970) that when fairly extensive samples of children's language were obtained, the mean length of T-units had special claim to consideration as a simple, objective, valid indicator of development in syntactic content.

Several additional issues had to be addressed in the determination of T-units written by children at the primary level. These issues were outlined by the Early Education Group of the Educational Testing Service (Chittenden, 1970) when they collected 300 compositions from third-grade classrooms and were identical to those High/Scope staff confronted when they collected earlier writing samples from the same age group. There were three issues to be dealt with:

- Interpretation of words spelled phonetically
- Omitted words
- Unintelligibility of writing

Since it had been decided not to judge the composition for spelling, when phonetic spellings (words which could be deciphered by the coder) were used, the T-unit was considered complete and the scoring of the T-unit unaffected. Words which could not be deciphered by the coder but which filled a necessary grammatical function in the T-unit, were also considered part of a T-unit and did not affect the scoring of the T-unit.

Omitted words and strings of unintelligible words were tabulated as mazes and were not used in determining total word counts or T-units. A more complete explanation of the procedure used in the T-unit analysis can be found in Appendix A.

In addition to obtaining mean length of T-units, therefore, tabulating the frequency of false starts, redundant subject pronouns, and mazes (incomplete constructions and unintelligible strings of words) also provided some measure of the degree of linguistic maturity evidenced in children's writing (O'Donnell et al., 1967).

Style

Most judgments regarding attributes of style such as originality, expressiveness of feelings, and spontaneity require either holistic scoring systems (judging papers on the basis of an overall impression) or composition scales (judging papers by comparisons with exemplary papers on a scoring continuum). Since the scoring system of this investigation would be analytic and based, for the most part, on frequency counts of attributes, the decision was made not to attempt to quantify attributes of style *per se*, but instead to define the posture to be taken by the writer. Braddock, Lloyd-Jones, and Schoer (1963) reported that variations in mode of discourse--narration, description, exposition, argument, or criticism--seem to affect writing performance and should be controlled when planning assignments for research based on the rating of compositions. Moreover, O'Donnell et al. (1967) suggested that the language used by children for different purposes might very likely yield somewhat different grammatical patterns. In addition, panelists at an open press conference on the National Assessment Writing Mechanics report (Porter, 1972) emphasized that if children's writing is to be both personal and imaginative and involve comparisons between real things, children should be encouraged to write in *all* instructional areas. For these reasons, two different types of writing assignments were specified in the present investigation--narration (or story-telling) and exposition (or reporting information). In the narrative task situation, the children were given a set of objects to use and then asked to write a make-believe story. In the reporting task situation, the same children were given a different set of objects to use and then asked to report what they were able to find out about those objects.

Content

Braddock et al. (1963) suggested improving research based on frequency counts by giving clarifying examples of each item. Since the two writing assignments represented two different modes of discourse--narration and exposition--the content criteria on which they were judged differed in several respects. The reporting assignment demanded, from the child, specific reference to what was discovered about the set of objects. The narrative assignment demanded a more imaginative approach to writing but still required organization of thought with sufficient supporting detail and transitions to tie the entire story together.

In order to discern evidence of cognitive thinking in the language used by children in reporting, samples of report writing were read and ranked on a global basis by High/Scope teachers and curriculum staff. These papers were then examined more closely in an attempt to articulate just what attributes distinguished one paper from another and each attribute was further defined. A second set of writing samples was obtained and scored to see if differences between the compositions could be established by frequency of occurrence of these attributes. On the basis of these sample papers, it appeared that frequency counts of classification, seriation, number, space and time words could differentiate attributes of content among compositions of reporting. The content criteria finally agreed upon for report writing (with detailed definitions of each attribute) can be found in Appendix B.

Inclusion of specific detail is, of course, also important for narrative writing. Upon reading some samples of narrative writing of young children, however, it was apparent that children who included detail did not always relate various parts of a story to the whole. Consequently, stories were often confusing to the reader; though the child might have understood how his story was organized, the relationship of parts to the whole remained a mystery to anyone else. In determining criteria for narrative writing, it was necessary to separate parts from the whole and to articulate elements of narrative writing that contributed to effective communication.

Several tasks were designed and then used to elicit imaginative stories from children at the High/Scope Foundation's Training and Development Center. These stories were read and globally rated by High/Scope staff and then distributed to teachers working outside High/Scope classrooms to determine what attributes of young children's narrative writing were valued by them. These teachers were asked to rank order the same compositions. Although there was agreement between the two groups of teachers on papers rated "low" quality, agreement did not always exist on papers rated either "middle" or "high" quality. Lack of agreement was more often a function of evaluating papers on the basis of writing mechanics than content criteria. Elements of content valued by teachers closely resembled elements of content found in other investigations of young children's writing (Chittenden, 1970; Veal and Biesbrock, 1969) and the categories being used by the Educational Testing Service to code oral stories of kindergarten and preschool children (Sidwell, personal communication).

A composite list of content criteria generally considered important was compiled and divided into three broad categories:

- Organization of ideas
- Connectedness of ideas
- Use of supporting detail (relationship words connoting comparisons, sequence, space, number and classification)

These broad categories were further defined so that agreement could be reached on the presence or absence of each element in children's stories. A list of attributes with their definitions can be found in Appendix C. Additional samples of both reporting and narrating writing were scored by five persons involved in the development of criteria to check agreement on each attribute.

Choosing an Appropriate Task to Elicit Writing Samples

Achievement tests, in general, have failed to consider intellectual-process goals and have concentrated instead on terminal products utilizing rote memory processes. As an alternative to standardized achievement tests, Grimmett (1970) stressed the importance of using situation tasks for evaluation of intervention programs. One theoretical supposition of the Cognitively Oriented Curriculum is that meaningful learning (as opposed to rote memorization) takes place when a child is engaged in direct experience with objects. Concepts are discovered as children explore materials, experiment with them, and check their information with that of other children engaged in the same activity. The situational task utilizes the same context in which the child is asked to function during the school day; the "test" itself is generated by the child through a process that makes sense to him.

Stimuli to elicit writing samples have ranged from simply assigning topics to, more recently, showing films or pictures. Lack of familiarity of a topic to children with a wide range of backgrounds and knowledge has been mentioned by Braddock et al. (1963) as another aspect for consideration when choosing an appropriate stimulus. Grimmett (1970) has pointed out the inadequacy of using either verbally or aurally structured situations when evaluating the performance of low-income children and has suggested using evaluation contexts containing objects for provoking behavior compatible with the child's internal knowledge structure. The view that young children need direct, active experiences with real objects as the basis for concept understanding is consistent with Piagetian theory and the principles of child development upon which the Cognitively Oriented Curriculum is based.

With an emphasis on process dimensions of learning, two tasks were devised to elicit report writing and narrative writing from second and third graders. Both tasks were administered to a sample group of children in order to modify instructions and to check for the appropriateness of the materials in stimulating the interest of young children.

The following set of objects was used for the reporting task:

- One scales
- Three balls (of varying weight and size)
    - one steel ball covered with clay
    - one styrofoam ball
    - one rubber ball
- Three blue pegs (of varying diameter and length)
- Twenty Cuisenaire rods
    - ten red
    - five green
    - three neutral
    - two orange

For the narrating task, the following set of objects was used:

- One small cardboard box
- One car (made of wood and bottle caps)
- Seven family persons (wooden figures made by Fisher-Price)
    - one dog
    - one girl
    - one boy
    - one grandma
    - one mother
    - one father
    - one baby

Children were allowed to use the objects and to role-play before being asked to write a make-believe story. A complete description of the task instructions and task materials can be found in Appendix D.

Defining the Assessment Context

The classroom process, or the way children act and interact with each other and with teachers, was also incorporated into the assessment situation to mirror the kinds of behaviors occurring in the classroom. Most standardized test situations have utilized restricted environments and limitations on permissible behaviors which have been in contradiction to the goals and structure of open classroom settings (DeRivera, n.d.). Behavioral processes which are part of a child's daily routine in the Cognitively Oriented Curriculum and which comprised the assessment context included the following:

- Children were allowed to share, to talk, and to help each other.
- Children were permitted to move about the room or choose when they wished to work.
- Children were permitted to take as much time as they desired to complete their writing. (Writing which occurred after 15 minutes was noted by the tester.)
- Children were permitted to ask help with grammar, spelling, or punctuation from the tester.

Instructions for both the tasks and the writing were standardized (see Appendix D) in such a way as to allow these processes to occur.

RESEARCH DESIGN AND PROCEDURES

The Subjects of the Study

Subjects in this investigation were second and third grade children enrolled in either Follow Through or non-Follow Through classes at three sites across the country--Seattle, Washington; Denver, Colorado; and P.S. 92, New York City. Both the reporting task and narrating task were administered to the same second grade Follow Through and non-Follow Through children in Seattle and Denver. Only the narrating task was administered to third grade Follow Through children in New York. The writing samples were obtained between May 22 and June 31, 1973 as the children were about to complete the school year.

The subjects were 40 Follow Through second grade children, 36 non-Follow Through second grade children, and 28 Follow Through third grade children. Selection of the Follow Through classrooms was based on the recommendation of the sponsor field consultants and local curriculum assistants, who ascertained that these classrooms had been implementing the Cognitively Oriented approach to language arts for at least part of the school year (see Appendix E for a full description of the Cognitively Oriented language arts program). In New York and Denver, all children from selected Follow Through or non-Follow Through classrooms were tested; in Seattle random samples of children from the Follow Through and non-Follow Through classrooms were obtained. Non-Follow Through classrooms were selected at Denver and Seattle for purposes of comparing written products of children experiencing other language arts approaches. In each case, the comparison groups consisted of children from the same socio-economic neighborhood as the Follow Through children. A brief description of the language arts approach used in each of the two designated non-Follow Through classrooms can be found in Appendix F.

All children in this investigation were from low socioeconomic neighborhoods located in large, urban areas. In Seattle, both the Follow Through and non-Follow Through classrooms were in Title I schools with a high concentration of low-income families. Both classrooms were predominantly black, though the Follow Through classroom also had three children who were bilingual. There were no bilingual children in the non-Follow Through classroom. In Denver, both classrooms were in the same school and consisted of children who were predominantly Mexican-American. One Follow Through child was bilingual; no non-Follow Through children were bilingual. In P.S. 92, New York, almost all Follow Through children were black; one child was bilingual.

The exact distribution of sexes in each grade level and group for each of the two tasks is shown in Table 1. The mean age of Follow Through second grade children was comparable to that of non-Follow Through second grade children.

Table 1

Distribution of Children Completing Each Writing Task
by Grade Level, Center, Sex, and Group

	Reporting Task					Narrating Task						
	Gr. 2 Seattle		Gr. 2 Denver		TOTAL	Gr. 2 Seattle		Gr. 2 Denver		Gr. 3 New York		TOTAL
	M	F	M	F	N	M	F	M	F	M	F	N
Follow Through	11	5	12	12	40	11	5	10	12	12	16	66
Non-Follow Through	11	5	13	7	36	11	5	13	6	--	--	35

Collection of Language Samples

The written language samples on which this investigation was based consisted of children's written responses to two tasks. In administering the first task (reporting), the objects were placed before each child. The children were told to look over the materials and then to write down what could be done with them. The children were then told that they could use the materials for ten minutes at which time they would be asked to write down everything they could tell others about the objects.

The task was administered to groups of children ranging in size from two to eight. The most common group size was four. A curriculum assistant gave the standardized instructions to the children while another adult (curriculum assistant or teacher aide) filled out an accompanying pupil checklist (see Appendix G) on each child as he completed the task.

Children were permitted to talk during the task but were not permitted to share materials. While writing, children were also permitted to talk and to ask each other for help with spelling, punctuation and grammar. Only if asked by a child could either adult give assistance with spelling, punctuation, or grammar. No other adult assistance or comments were permitted during the time the children used the materials or wrote what they had found out about the objects.

On another day the narrating task was administered to the same children. The children were told they would be asked to write a make-believe story which might begin with the words "Once upon a time...". They could use the narrating task objects for ten minutes to help them make up their story.

This task was also administered to groups of children ranging in size from four to eight children. The task was monitored by two adults who gave the standardized directions and completed an accompanying checklist (see Appendix G). Children were permitted to talk and share their materials. While writing they were permitted to ask help from one another and from either adult. Adults could give help with spelling, punctuation and grammar only if requested and were not permitted to comment in any other way.

All adults administering both tasks had had experience in elementary classrooms, either as curriculum assistants or as teacher aides. In order to assure comparability of the samples, the testers responsible for giving the directions were trained at a sponsor workshop held in Ypsilanti. Schedules of instructions as well as pupil checklists were reviewed, and the testers were asked to follow them without deviation. Two groups of children were brought together so that the testers could practice administering each task and completing the pupil checklists. Any minor difficulties in administering the tasks were resolved at that time. Children's written responses were stapled to the corresponding pupil checklist and mailed back to Ypsilanti for scoring. The written compositions were scored exactly according to what the child wrote. Examples of compositions for both tasks may be found in Appendix H.

Scoring of the Writing Samples

Most of the initial scoring was carried out by High/Scope data processing staff who were two students from a local university. Writing samples obtained from children of comparable age to those in this investigation were used in reviewing scoring procedures with the coders. Questions regarding the scoring were clarified before any coding of the original samples was begun. All samples were scored individually by each coder and then re-coded by the other for verification. Questionable items were reviewed with the authors and noted on a separate sheet to be included as examples for scoring procedures. These items constituted clarifications in scoring procedures rather than new procedures. The coders were unaware of which grade level or group the writing samples belonged to.

For the purpose of analyzing the syntactic maturity of the writing, a set of scoring procedures for analyzing T-units similar to that used by O'Donnell et al. (1967) was followed. A T-unit was defined as a single independent predication together with any subordinate clauses that may be grammatically related to it. In establishing guidelines for determination of T-units, the following points were considered:

- A coordinating conjunction linking two independent clauses was always regarded as the first element in the second clause;
- The writer's punctuation was disregarded in the analysis since the identification of the T-unit depended upon grammatical principles;
- In counting words, contractions (aren't, he'd, etc.) were counted as two words and compound nouns (e.g., pinball) were given the count indicated by the number of bases involved.

A more complete definition of the scoring procedures followed in the determination of T-units can be found in Appendix A.

Other elements which were noted included redundant subject pronouns, false starts, mazes, and fragments. Redundant subject pronouns included pronouns which repeated the subject (such as "she" in "the girl she ate breakfast"). False starts were words which were repeated, serving no grammatical function in the T-unit (such as "in the morning in the morning she went home"). Mazes were defined as a word or group of words that was structurally incomplete according to generally accepted notions about adult standards of language use. Mazes were the result of a child:

- Omitting one word, thereby rendering a group of words structurally incomplete ("the ___ was going home");
- Omitting multiple words, thereby rendering a group of words structurally incomplete ("and when he ___");

- Employing more than one unintelligible word, one right after another ("the he burl orded nodert in the water").

A special category of mazes, entitled fragments, was also noted. Fragments were subordinate clauses which did not logically belong to either the preceding T-unit or the T-unit immediately following the fragment (such as, Because the sun was hotter. The telephone rang.)

The T-units in each writing sample were counted, and the total number of words in each sample was also obtained (excluding redundant subject pronouns, false starts, mazes, and fragments). The mean number of words per T-unit was computed as the best single indicator of syntactic maturity (O'Donnell et al., 1967). To obtain an estimate of the percentage of words in writing samples which were incomplete constructions or unintelligible, the number of words contained in mazes was also tabulated and a ratio determined of the total words in mazes to the total words in T-units of each sample.

The intelligible portions of writing samples elicited by both tasks were further analyzed for variables considered important to each type of writing assignment. Extraneous matter (redundant subject pronouns, false starts, fragments, and mazes) was excluded from these analyses. Words which connoted relationships of classification, seriation, number, space and time were tabulated for the reporting assignments. Classification concepts fell into broad categories of description--color, material, shape, texture, and use and type. Seriation concepts fell into comparative categories, such as "smoother," "longest," etc. Number concepts covered gross comparison of weight, size, diameter, and number as well as equivalencies, combining of sets, and counting. Spatial concepts included all spatial words the child used, such as "into," "under," and "on top of." Temporal relationships were coded by the number of times a child used time words, such as "first," "next," and "after." The number of times "then" was used was coded separately. Both O'Donnell et al. (1967) and Hunt (1965) reported a high percentage of coordination of main clauses using the conjunction "and" in compositions of young children. Since many children appear to use "and then" with almost as much frequency as the conjunction "and," it was decided to tabulate "then" as a separate indicator of temporal sequence. A complete description of categories used in coding cognitive variables can be found in Appendix B.

In scoring the narrative samples, the primary interest was in how young children responded to writing a make-believe story (i.e., whether they reported, wrote a fantasy story, or wrote a combination of the two types) and whether they exhibited any evidence of organization, logical development, and use of supporting detail. Evidence of organization was defined as the presence of a beginning, middle and end. Did the child state a topic, set the scene by time or space, or introduce characters? Did he then introduce new characters, change the scene, change the space, change the time, or introduce conflict or an obstacle? Was there resolution of conflict, rejoining after separation, establishment of a causal link on the basis of time, space, or causal patterns? Did the child make a prediction or state an insight? Each of the parts could be as short as one sentence or as long as many sentences. If the story was too short, either supporting detail necessary to tie ideas together or logical development of the plot would probably be missing. Logical development was defined as obvious connections between the beginning and the middle or between the beginning, middle, and the end. The coders were instructed not to infer what the child intended without sufficient evidence that such an inference or connection was valid. Relationship words of time, space, seriation, number and classification were noted as evidence of supporting detail. A complete description of the scoring categories for the narrative samples can be found in Appendix C. Examples of narrative writing samples can be found in Appendix H.

PRELIMINARY FINDINGS AND CONCLUSIONS

The principal intent of this investigation was to develop a writing assessment procedure which would measure composition ability in young children enrolled in classrooms employing different approaches to language arts instruction. Measurable differences in elements of language maturity and content were examined. As noted earlier, two distinct task situations were utilized to elicit two types of writing assignments--narrative and reporting. After summarizing the analysis procedures, the findings will be discussed under these two general headings according to selected variables of language maturity and composition content.

Analysis Procedures

There are two types of variables used in this assessment. The first consists of variables that produce a distribution of scores. These include the elements of language maturity (e.g., T-unit length) and, for the reporting stories, the number of relationship words used. The analysis of each of these variables proceeded according to the following sequence. First, because of the incomplete nature of the design for the narrating task (see Table 2), a one-way analysis of variance across the five groups was computed. If a significant *F* ratio was obtained, multiple *t* tests were calculated on all pairwise comparisons. This procedure is not generally recommended since the nonorthogonality of the multiple comparisons

Table 2

Research Design and N's Used in Studying Center, Group, and Grade Level Differences in Written Language Maturity

Group

	Grade	Follow Through		Non-Follow Through	
		Reporting	Narrating	Reporting	Narrating
Denver	2	24	22	20	19
Seattle	2	16	16	16	16
New York	3	--	28	--	--

leads to the finding of a greater number of "significant" differences than is warranted. Because of the exploratory nature of this investigation, however, it is desirable to identify any potentially important group differences, and to accept, at least temporarily, the increased risk of committing Type I errors. In order to obtain a more conservative estimate of the group means that differ from each other, the 95% confidence interval for each mean was computed by the Scheffé method (Hays, 1963). The tables in this report list all contrasts found to be significant ($p < .05$) according to the $\underline{t}$ tests, and asterisks indicate those contrasts that are also significant by the Scheffé method. The across-site comparisons found to be significant are reported in the tables, but are not discussed because of the difficulty of interpreting such differences. Within a site, Follow Through and non-Follow Through children were selected from similar socio-economic neighborhoods; across sites it was not possible to control adequately for differences in population. Within the Follow Through group, however, grade level comparisons (second vs. third) were made.

For the reporting task, the design would normally call for a two-way site x group analysis of variance. Again, because differing site characteristics would make any interaction effects almost impossible to interpret, and because the main interest is possible differences between children who have been in the Follow Through language arts curriculum and those who have not, $\underline{t}$ tests were computed between groups within each site.

The second type of variable consists of frequencies in discrete categories (e.g., presence or absence of beginnings). The significance of the differences between groups on these variables was analyzed using chi square tests. For many of the comparisons the sample size was small ($N < 40$) or the 2 x 2 contingency tables contained cells with expected frequencies less than 5. Thus, for all 2 x 2 tables the Fisher's exact probability value (Siegel, 1956) is reported instead of the chi square statistic.

The Narrative Assignment

The variables analyzed from the narrative writing fall into three categories--elements of language maturity, organization and connectedness of ideas, and use of relationship words. The results from each of these sets of analyses are presented here.

Elements of Language Maturity

Analyses of variance were computed to test for differences among groups in the frequency of certain syntactic elements. The research design permitted comparisons among all five groups--each of the second grade groups (Follow Through and non-Follow Through) and the third grade Follow Through group.

Table 3 presents the results of the analysis on the mean numbers of words in the writing, exclusive of extraneous matter categorized as redundant subject pronouns, false starts, fragments, and mazes. The mean number of words for the third grade group was significantly greater than for each of the four second grade groups, but the Follow Through means did not differ from the non-Follow Through means.

Table 4 shows the mean number of T-units written by each group. Not unexpectedly, the mean number of T-units written by the third grade group was also significantly higher than for any of the second grade groups, and the second grade groups did not differ from each other. Table 5 indicates, however, that increases in length of the total written responses did not mean significant gains in mean length of T-units. There were no significant differences in mean length of T-units among groups. In the study done by O'Donnell et al. (1967) comparing mean length of T-units in writing of third, fifth and seventh graders, a significant increase in mean length of T-units appeared in grade 5 when other syntactic developments also occurred. Given the fact that younger children have not generally acquired much facility in writing, no significant differences in mean length of T-units might have been anticipated. If, however, the development of fluency is valued as an objective for language arts instruction in the early grades, length of total responses excluding extraneous matter might be considered a valid measure of developing language facility.

The incidence of redundant subject pronouns, false starts, and fragments was too few for analyzing group differences in mean occurrences. Only seven children from the total population produced redundant subject pronouns, false starts, and fragments in the narrative writing samples. The mean number of such extraneous matter was less than 2.0 for any one child. Tests on the number of children producing mazes, however, were calculated. Though mazes were the most common extraneous matter appearing in the narrative writing samples, differences in occurrence of mazes among groups were not very large. There was no significant difference among second grade groups of children who produced mazes although the trend was toward non-Follow Through children at both centers producing more mazes than Follow Through children. Table 6

TABLE 3

Mean Length of Story (in words) for Narrative Writing
by Center, Group, and Grade

	Grade	FOLLOW THROUGH		NON-FOLLOW THROUGH	
		Mean	S.D.	Mean	S.D.
Denver	2	42.80	33.32	18.95	7.11
Seattle	2	27.86	10.17	47.50	32.00
New York	3	97.79	82.90	---	---

F = 9.19; df = 4; p < .05

Significant Contrasts (t tests):
- New York > Denver Follow Through*
- New York > Denver Non-Follow Through*
- New York > Seattle Follow Through*
- New York > Seattle Non-Follow Through*

TABLE 4

Mean Number of T-units for Narrative Writing
by Center, Group, and Grade

	Grade	FOLLOW THROUGH		NON-FOLLOW THROUGH	
		Mean	S.D.	Mean	S.D.
Denver	2	4.65	4.67	2.37	1.61
Seattle	2	3.43	1.28	5.56	3.67
New York	3	10.82	7.96	---	---

F = 9.93; df = 4, 92; p < .05

Significant Contrasts (t tests):
- New York > Denver Follow Through*
- New York > Denver Non-Follow Through*
- New York > Seattle Follow Through*
- New York > Seattle Non-Follow Through

TABLE 5

Mean of the Mean Length of T-units for Narrative Writing
by Center, Group, and Grade

	Grade	FOLLOW THROUGH		NON-FOLLOW THROUGH	
		Mean	S.D.	Mean	S.D.
Denver	2	10.64	3.19	9.67	4.69
Seattle	2	8.53	2.02	8.89	3.05
New York	3	8.88	2.02	---	---

F = 1.40; df = 4, 92; N.S.

No Significant Contrasts

---

*Significant contrast (p < .05) according to the Scheffé test.

TABLE 6

Number of Children Who Produced Mazes, Mean Number of Mazes Produced, and the Mean and Range of Length of Maze for Narrative Writing by Group, Grade, and Center

		FOLLOW THROUGH				NON-FOLLOW THROUGH			
	Grade	Number of Children with Mazes	Mean Number of Mazes	Length of Maze Mean	Length of Maze Range	Number of Children with Mazes	Mean Number of Mazes	Length of Maze Mean	Length of Maze Range
Denver	2	3	1.00	5.33	2-11	4	1.00	6.00	2-12
Seattle	2	1	1.00	2.00	---	6	1.33	8.67	3-22
New York	3	2	1.00	6.50	4-9	---	---	---	---

shows the total number of children who produced mazes, the mean number of mazes produced, and the mean and range of the length of mazes in narrative writing. The finding that the occurrence of redundant subject pronouns, false starts and fragments as well as mazes were attributable to a few individuals in each group supports the findings of Hunt (1964, 1965) and O'Donnell et al. (1967).

Though no significant increases in mean T-unit length were found within or across grade levels, significant differences in length of responses were noted between the second and third grade levels for children enrolled in the same curriculum approach to language arts instruction. No differences in the proportion of children employing redundant subject pronouns, false starts, fragments or mazes were found.

Elements of Content

Comparisons of the frequency of occurrence or nonoccurrence of content elements were made between second grade Follow Through and non-Follow Through classrooms at each center. Additional comparisons were made between the third grade Follow Through classroom and the combined data from second grade Follow Through classrooms to examine differences between grade levels when the Cognitively Oriented Curriculum approach to language arts instruction was employed.

Child's response to task. In none of the classrooms did any children respond to the narrating task situation by writing a combination of the two types of writing assignments, i.e., a story which was both fantasy (an account of what happened to make-believe characters) and a report (an account of what the children themselves actually did with the objects). Though a few children responded by reporting instead of writing a make-believe story, the difference in response to the task situation between groups was not significant. The fact that most children responded to the narrative task situation by writing a fantasy story, and not reporting what they themselves did with the objects, might have been a function of the task directions. The instructions explicitly stated that children might begin their make-believe stories with the words "Once upon a time...". In any event, the desired result of stimulating children to write narrative stories after using certain objects did occur.

The fantasy stories were analyzed for specific elements of content. The greater part of the data presented in this section of the report is concerned with relative frequencies of occurrence of various kinds of organizational elements, transitions, and supporting detail.

Organization. The organization of narrative writing was assessed by looking for evidence of beginnings, middles, and endings. Evidence of a beginning was present in 99% of all stories, and thus no difference among groups in the occurrence of beginnings was found.

Other elements of organization which were examined were evidence of middles and endings. Tables 7-10 show the relative frequencies of occurrence of the organizational components--middles, endings, beginnings and middles, and also beginnings, middles, and endings--in narrative writing of second grade Follow Through and non-Follow Through children in Denver. In each instance, Follow Through children performed significantly better than non-Follow Through children on these criteria of story organization. There were no significant differences on any of these variables between second grade Follow Through and non-Follow Through children in Seattle, nor did any differences between Follow Through and non-Follow Through appear when the second grade groups were combined across centers. However, when combined second grade Follow Through groups were compared with the third grade Follow Through children, significant differences in the number of children who employed middles, endings, beginnings and middles, and beginnings, middles, and endings were found. In each instance, the third grade Follow Through children performed significantly better than the second grade Follow Through children (see Tables 11-14).

Transitions. Transitions between various parts of the narrative story were examined by comparing frequencies of occurrence of connectedness between beginnings, middles, and endings. Tables 15 and 16 show that in Denver the Follow Through children also performed significantly better than non-Follow Through children on connectedness between parts of stories. Connectedness was defined as the existence of obvious connections between beginnings and middles or between beginnings, middles, and endings; connectedness could be the use of transitional sentences or key words which tied one part of the story to another. There were no significant differences on variables of connectedness between the Follow Through and non-Follow Through groups in Seattle, nor between combined Denver and Seattle second grade Follow Through and non-Follow Through groups. Tables 17 and 18 show the number of cases in which third grade Follow Through children used connectedness in their narrative stories compared to the combined group of second grade Follow Through children. The proportion of connectedness between beginnings and middles and between beginnings, middles, and endings was significantly higher in the

TABLE 7

Number (and percent) of Narrative Writing Samples Having Middles in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	12 (60.0%)	8 (40.0%)	20
NON-FOLLOW THROUGH	4 (21.1%)	15 (78.9%)	19
TOTAL	16	23	39

Fisher exact probability = .015

TABLE 8

Number (and percent) of Narrative Writing Samples Having Endings in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	8 (40.0%)	12 (60.0%)	20
NON-FOLLOW THROUGH	2 (10.5%)	17 (89.5%)	19
TOTAL	10	29	39

Fisher exact probability = .039

TABLE 9

Number (and percent) of Narrative Writing Samples Having Beginnings and Middles in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	12 (60.0%)	8 (40.0%)	20
NON-FOLLOW THROUGH	4 (21.1%)	15 (78.9%)	19
TOTAL	16	23	39

Fisher exact probability = .015

TABLE 10

Number (and percent) of Narrative Writing Samples Having Beginnings, Middles, and Endings in Denver Second Grade by Group

	Samples Having Two or Three Components	Samples Having Beginnings Only	TOTAL
FOLLOW THROUGH	12 (60.0%)	8 (40.0%)	20
NON-FOLLOW THROUGH	5 (26.3%)	14 (73.7%)	19
TOTAL	17	22	39

Fisher exact probality = .035

TABLE 11

Number (and percent) of Narrative Writing Samples Having Middles for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	20 (58.8%)	14 (41.2%)	34
FOLLOW THROUGH Third Grade	25 (89.3%)	3 (10.7%)	28
TOTAL	45	17	62

Fisher exact probability = .007

TABLE 12

Number (and percent) of Narrative Writing Samples Having Endings for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	12 (35.3%)	22 (64.7%)	34
FOLLOW THROUGH Third Grade	21 (75.0%)	7 (25.0%)	28
TOTAL	33	29	62

Fisher exact probability = .002

TABLE 13

Number (and percent) of Narrative Writing Samples Having Beginnings and Middles for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	20 (58.8%)	14 (41.2%)	34
FOLLOW THROUGH Third Grade	25 (89.3%)	3 (10.7%)	28
TOTAL	45	17	62

Fisher exact probability = .007

TABLE 14

Number (and percent) of Narrative Writing Samples Having Beginnings, Middles, and Endings for Follow Through by Grade Leve

	Samples Having All Three Components	Samples Having Beginning and Middle or Beginning and Ending	Samples Having Beginnings Only	TOTA
FOLLOW THROUGH Second Grade	12 (35.3%)	8 (23.5%)	14 (41.2%)	34
FOLLOW THROUGH Third Grade	20 (71.4%)	6 (21.4%)	2 (7.1%)	28
TOTAL	32	14	16	62

Chi-square = 10.81; df = 2; $p < .05$

TABLE 15

Number (and percent) of Narrative Writing Samples Having Connectedness Between Beginnings and Middles in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	11 (55.0%)	9 (45.0%)	20
NON-FOLLOW THROUGH	3 (15.8%)	16 (84.2%)	19
TOTAL	14	25	39

Fisher exact probability = .012

TABLE 16

Number (and percent) of Narrative Writing Samples Having Connectedness Between Beginnings, Middles, and Endings in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	7 (35.0%)	13 (65.0%)	20
NON-FOLLOW THROUGH	1 (5.3%)	18 (94.7%)	19
TOTAL	8	31	39

Fisher exact probability = .026

TABLE 17

Number (and percent) of Narrative Writing Samples Having Connectedness Between Beginnings and Middles for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	18 (52.9%)	16 (47.1%)	34
FOLLOW THROUGH Third Grade	24 (85.7%)	4 (14.3%)	28
TOTAL	42	20	62

Fisher exact probability = .006

TABLE 18

Number (and percent) of Narrative Writing Samples Having Connectedness Between Beginnings, Middles, and Endings for Follow Through by Grade Leve

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	11 (32.4%)	23 (67.6%)	34
FOLLOW THROUGH Third Grade	18 (64.3%)	10 (35.7%)	28
TOTAL	29	33	62

Fisher exact probability = .012

written stories of third grade Follow Through children.

Relationship words. The third category of content elements investigated was use of relationship words. Relative frequencies of presence or absence of relationship words connoting time, space, seriation, classification, and number were examined for each group. Tables 19 and 20 show that in Denver a significantly greater number of Follow Through children used time and number words compared with non-Follow Through children. There was no significant difference in the use of relationship words between Follow Through and non-Follow Through children in Seattle. In neither center were there group differences in the use of space, seriation and classification words. When both second grade groups were combined, the proportion of second grade Follow Through children who employed number words was significantly greater than that of non-Follow Through second grade children (see Table 21). This was the only variable from the narrative task that differentiated Follow Through and non-Follow Through when data from both centers were combined.

The greatest differences between groups in use of relationship words appeared when the stories of third grade Follow Through children were compared with those of the combined groups of second grade Follow Through children. Tables 22-24 show a significantly greater proportion of third grade Follow Through children employing time, space, and seriation words.

The preceding analyses have dealt with the occurrences of words denoting each relationship area. Another measure of supporting detail is the total number of relationship areas represented in each writing sample. Table 25 presents data on the mean number of relationship areas present in children's written stories by group, grade, and center. According to the Scheffé test, the mean number for the third grade Follow Through group was significantly higher than that of the two Seattle groups and the Denver non-Follow Through group. The mean number for the Denver Follow Through second grade was higher than that of the Denver non-Follow Through group according to the *t* test but not by the more conservative Scheffé method.

The Reporting Assignment

Only data from second grade Follow Through and non-Follow Through groups at two sites were collected for the reporting task. Instead of using a 2 x 2 (site by group) analysis of variance, *t* tests were used to test group differences within each site. The variables analyzed from the report writings fell into two categories--elements of language maturity and use of relationship words.

TABLE 19

Number (and percent) of Narrative Writing Samples Having Time Words in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	6 (30.0%)	14 (70.0%)	20
NON-FOLLOW THROUGH	1 (5.3%)	18 (94.7%)	19
TOTAL	7	32	39

Fisher exact probability = .053

TABLE 20

Number (and percent) of Narrative Writing Samples Having Number Words in Denver Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	15 (75.0%)	5 (25.0%)	20
NON-FOLLOW THROUGH	4 (21.1%)	15 (78.9%)	19
TOTAL	19	20	39

Fisher exact probability = .001

TABLE 21

Number (and percent) of Narrative Writing Samples Having Number Words in Denver and Seattle Second Grade by Group

	YES	NO	TOTAL
FOLLOW THROUGH	20 (58.8%)	14 (41.2%)	34
NON-FOLLOW THROUGH	8 (22.9%)	27 (77.1%)	35
TOTAL	28	41	69

Fisher exact probability = .002

TABLE 22

Number (and percent) of Narrative Writing Samples Having Time Words for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	11 (32.4%)	23 (67.6%)	34
FOLLOW THROUGH Third Grade	20 (71.4%)	8 (28.6%)	28
TOTAL	31	31	62

Fisher exact probability = .002

TABLE 23

Number (and percent) of Narrative Writing Samples Having Space Words for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	19 (55.9%)	15 (44.1%)	34
FOLLOW THROUGH Third Grade	25 (89.3%)	3 (10.7%)	28
TOTAL	44	18	62

Fisher exact probability = .004

TABLE 24

Number (and percent) of Narrative Writing Samples Having Seriation Words for Follow Through by Grade Level

	YES	NO	TOTAL
FOLLOW THROUGH Second Grade	1 (2.9%)	33 (97.1%)	34
FOLLOW THROUGH Third Grade	6 (21.4%)	22 (78.6%)	28
TOTAL	7	55	62

Fisher exact probability = .028

TABLE 25

Mean Number of Relationship Areas (time, space, seriation, classification, and number) in Narrative Writing Samples

	Grade	FOLLOW THROUGH Mean	FOLLOW THROUGH S.D.	NON-FOLLOW THROUGH Mean	NON-FOLLOW THROUGH S.D.
Denver	2	2.25	1.07	1.32	0.82
Seattle	2	1.93	1.27	1.88	1.02
New York	3	3.18	1.25	---	---

F = 9.06; df = 4,92; p < .05

Significant Contrasts (t tests):

Denver Follow Through > Denver Non-Follow Through
New York Follow Through > Denver Follow Through
New York Follow Through > Denver Non-Follow Through*
New York Follow Through > Seattle Follow Through*
New York Follow Through > Seattle Non-Follow Through*

---

*Significant contrast (p < .05) according to the Scheffé test.

Elements of Language Maturity

A series of t tests was computed to test for differences between groups in the frequency of certain syntactic elements. Table 26 presents the results of the analysis on the mean length of writing, exclusive of redundant subject pronouns, false starts, fragments, and mazes. There were no differences among second grade groups on mean number of words in report writing. Table 27 shows the mean number of T-units written by each group. Again, there were no significant differences on the mean number of T-units written by second grade groups. Table 28 shows the mean length of T-units in report writing. No differences among groups were found. The results of t tests for these three variables in report writing were consistent with the results of the same analyses in narrative writing--no differences in mean length of story, mean number of T-units, or mean length of T-units were found among second grade groups.

Tables 29-31 present the data on mazes produced in the report writings. In Seattle, no Follow Through children produced mazes, resulting in a significant difference between groups at that center. In general, mazes occurred so infrequently that they provide little information about the effect of the program on children's writing.

Use of Relationship Words

A series of t tests was computed to test for differences between groups in the frequency of relationship words connoting classification, seriation, number, space, and time in report writing. In addition, the differences between groups in the frequency of particular words connoting relationships of classification, number, and time were tested. These particular classification words included those describing color, material, shape, texture, and use or type. Particular number concepts included gross comparisons of weight, size, diameter, and number equivalencies, combining of sets, and counting. Particular time words included use of the word "then" and other time words.

No significant differences among groups were found in the mean number of classification, seriation, number, space or time words. When the mean ratio of classification, seriation, number, space, and time words to total words was examined, there was no significant difference between groups at either site (see, for example, results for classification words in Table 32).

Table 33 shows the mean ratio of combined relationship words to total words in report writing by each group. The mean ratio of combined relationship words to total words was signi-

TABLE 26

Mean Length of Story (in words) for Report Writing by Center and Group

	FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Mean	S.D.	Mean	S.D.
Denver	20.12	14.11	17.32	7.84
Seattle	16.06	11.37	21.75	16.04

t = .78; df = 41; n.s.
t = 1.16; df = 30; n.s.

TABLE 27

Mean Number of T-units for Report Writing by Center and Group

	FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Mean	S.D.	Mean	S.D.
Denver	3.04	2.03	3.11	1.45
Seattle	2.19	1.76	3.25	1.53

t = .12; df = 41; n.s.
t = 1.82; df = 30; n.s.

TABLE 28

Mean of the Mean Length of T-units for Report Writing by Center and Group

	FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Mean	S.D.	Mean	S.D.
Denver	6.82	2.54	5.86	1.43
Seattle	7.94	2.99	6.26	2.09

t = 1.41; df = 35; n.s.
t = 1.77; df = 27; n.s.

TABLE 29

Number of Children Who Produced Mazes, Mean Number of Mazes Produced, and the Mean and Range of Length of Maze for Report Writing by Group and Center

	FOLLOW THROUGH				NON-FOLLOW THROUGH			
	Number of Children with Mazes	Mean Number of Mazes	Length of Maze		Number of Children with Mazes	Mean Number of Mazes	Length of Maze	
			Mean	Range			Mean	Range
Denver	6	1.33	7.17	4-14	6	1.17	5.00	2-11
Seattle	0	----	----	----	4	1.00	8.50	3-23

TABLE 30

Denver: Number of Children Producing Mazes

	Mazes	No Mazes	Total
FOLLOW THROUGH	6	18	24
NON-FOLLOW THROUGH	6	13	19
TOTAL	12	31	43

Fisher exact probability = .444

TABLE 31

Seattle: Number of Children Producing Mazes

	Mazes	No Mazes	Total
FOLLOW THROUGH	0	16	16
NON-FOLLOW THROUGH	4	12	16
TOTAL	4	28	32

Fisher exact probability = .051

TABLE 32

Mean Ratio of Classification Words to Total Words in Report Writing by Group and Center

	FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Mean	S.D.	Mean	S.D.
Denver	.148	.74	.111	.54
Seattle	.145	.45	.196	.10

t = 1.56; df = 30; n.s.
t = 1.54; df = 22; n.s.

TABLE 33

Mean Ratio of Combined Relationship Words (classification, seriation, number, space, and time) to Total Words in Report Writing by Group and Center

	FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Mean	S.D.	Mean	S.D.
Denver	.186	.10	.111	.54
Seattle	.176	.75	.250	.10

t = 2.38; df = 30; $p < .05$
t = 2.05; df = 24; $p = .05$

ficantly higher for the Denver Follow Through group than for the non-Follow Through group but in Seattle the ratio was significantly higher for the non-Follow Through than for the Follow Through group.

No significant differences among groups were found in the mean number of particular classification, number, or time words, nor in the mean ratio of particular classification, number, or time words to total words in report writing.

Differences in Language Maturity Evidenced in the Two Writing Tasks

One reason for employing two tasks in the investigation of children's writing was to determine whether the assessment procedure would influence the nature of the writing. If measures of writing are affected by the writing task, then it is obvious that the task must be taken into account when drawing conclusions about the development of writing ability. In some respects the differences in scoring procedures for the narrative and report writing reflected different expectations about the content of the writing--the scoring of the report writing assumed there would be a greater use of the relationship words as the children reported on what they had done with the materials. The same measure of syntactic maturity, however, was used in the analysis of both types of writing. The comparison of the narrative and report writings in terms of T-units is described here.

For three variables (length of writing in words, number of T-units, and mean length of T-unit) a repeated measures analysis of variance was calculated with type of writing as the within-groups effect and Follow Through/non-Follow Through as the between-groups factor. The results are summarized in Table 33-a. There were no significant group effects, although the Follow Through means were consistently higher than the non-Follow Through means. None of the interaction effects was significant either. For two of the measures (length of writing and length of T-unit), the means were significantly higher for the narrative writing than for the report writing. In terms of the number of words written, when the same children wrote in the narrative task their stories were about 66% longer than in the reporting task. But not only did they write more, they wrote with greater complexity in the narrating task (as measured by length of T-unit).

It is clear from these results that the purpose of the writing (i.e., to report or to tell a story) has a large and significant effect upon the quantity and quality of the writing.

TABLE 33-a

Comparison of Syntatic Maturity Evidenced by Second Graders in the Two Types of Writing

	Report Writing			Narrative Writing		
	Follow Through N=29	Non-Follow Through N=32	Combined Groups N=61	Follow Through N=29	Non-Follow Through N=32	Combined Groups N=61
Mean Length of Writing (in words)	22.86	20.09	21.41	37.83	33.50	35.56
Mean Number of T-Units	3.34	3.31	3.33	4.28	4.03	4.15
Mean Length of T-Unit	7.16	5.95	6.53	9.86	9.20	9.51

F-Ratios Obtained in Analyses of Variance

	Group Main Effect df = 1,59	Type of Writing Main Effect df = 1,59	Interaction Effect df = 1,59
Length of Writing	< 1.0	17.35*	< 1.0
Number of T-Units	< 1.0	3.08	< 1.0
Length of T-Unit	3.42	28.83*	< 1.0

*p < .05

Since both reporting and narrating are important reasons for writing and represent valid abilities for children to learn, both should be considered in measures of children's writing ability.

Child Behavior During Testing

Narrative Writing

A checklist, completed by the tester, was used to assess the context in which the narrative writing samples were obtained. Variables which were analyzed included specific kinds of behavior occurring during the administration of the narrative writing task and the amount of time children spent using the materials and writing their stories. Extenuating circumstances noted by the testers such as warm weather, disturbance outside classroom, or interruption during the task occurred only in isolated cases and were not analyzed further.

Child-child and child-tester interactions. Analyses of variance were computed to test for differences among groups in the frequency of certain behaviors. Table 34 presents the results of the analyses on the mean number of child-child and child-tester interactions during the narrative writing task. The mean number of child-child interactions while using materials for both second grade Follow Through groups was significantly greater than for the third grade Follow Through group (New York). The mean number of times both second grade Follow Through groups requested help from the tester with spelling, punctuation, or grammar was also significantly greater than for the third grade group. There were no other significant grade level differences. Since the third grade group performed significantly better than the second grade group on length of total responses and on variables of content, it would appear that more frequent child-child interactions while using materials and turning to the tester for grammatical help had little effect on the kinds of differences in writing performance which occurred between grade level groups enrolled in Follow Through classrooms.

Within-site comparisons show significant differences on only one variable: the mean number of times the Denver Follow Through group requested help with spelling, punctuation, or grammar from another child was significantly greater than for the Denver non-Follow Through group. There were no other significant differences within sites between the Follow Through and non-Follow Through groups.

Amount of time spent using materials. Table 35 shows the results of the analysis on the mean number of minutes children in each group ~~spent using~~ materials before writing their

TABLE 34

Mean Number of Times Child-Child and Child-Tester Interactions Occurred during Narrative Writing Task[†] by Group, Grade Level, and Center

		DENVER (Grade 2)		SEATTLE (Grade 2)		NEW YORK (Grade 3)		Significant Contrasts (t tests)
		Follow Through	Non-Follow Through	Follow Through	Non-Follow Through	Follow Through	Non-Follow Through	
1. Talked to other child while using materials[†]	$\overline{X}$	2.82	2.53	2.71	2.25	2.12	——	Den FT > NY FT * Seattle FT > NY FT Den FT > Seattle NFT
	SD	.50	.72	.61	.78	.88	——	
2. Talked to tester while using materials[†]	$\overline{X}$	1.53	1.50	1.36	1.27	1.54	——	N.S.
	SD	.80	.73	.74	.59	.51	——	
3. Engaged in cooperative play[††]	$\overline{X}$	1.76	1.75	1.86	1.50	1.50	——	N.S.
	SD	.83	.68	.66	.52	.51	——	
4. Talked to other child while writing[†]	$\overline{X}$	1.68	1.78	1.86	1.38	1.84	——	N.S.
	SD	.84	.65	.86	.25	.90	——	
5. Talked to tester while writing[†]	$\overline{X}$	2.00	1.94	1.78	1.31	1.56	——	Den FT > Seattle NFT Den NFT > Seattle NFT
	SD	.82	.80	.70	.48	.79	——	
6. Requested help with spelling, punctuation, or grammar from other child[†]	$\overline{X}$	1.55	1.06	1.17	1.13	1.38	——	Den FT > Den NFT Den FT > Seattle NFT
	SD	.69	.24	.39	.12	.77	——	
7. Requested help with spelling, punctuation, or grammar from tester[†]	$\overline{X}$	2.50	2.28	2.78	2.38	2.04	——	Den FT > NY FT Seattle FT > NY FT
	SD	.74	.75	.58	.81	.77	——	
8. Voluntarily gave help to another child[†]	$\overline{X}$	1.36	1.11	1.28	1.50	1.33	——	N.S.
	SD	.58	.32	.47	.52	.70	——	

[†] 1 = 0 times
2 = 1-2 times
3 = 3 or more times

[††] 1 = Not at all
2 = Less than ½ of the time
3 = More than ½ of the time

* Significant contrast according to the Scheffé test ($p < .05$)

TABLE 35

Mean Number of Minutes Children Spent Using Materials for the Narrating Writing Task by Group, Grade Level, and Center

		FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Grade	Mean Number of Minutes	S.D.	Mean Number of Minutes	S.D.
Denver	2	10.0	0	10.0	0
Seattle	2	9.9	.27	8.8	---
New York	3	9.6	1.10	---	---

F = 4.10; df = 2,55; p < .05

Significant Contrasts (t tests):

Seattle Follow Through > New York Follow Through
Seattle Follow Through > Seattle Non-Follow Through*

---

*Significant contrast (p < .05) according to Scheffé test.

narrative stories. Since all children in Denver had the maximum score of ten minutes, the group variances were zero. The analysis of variance was performed on the remaining three groups. The important finding was that the Seattle Follow Through group spent more time using materials than the non-Follow Through group did, but less time than the third graders in New York. Since the third graders wrote longer narrative stories, it suggests that older children don't need to manipulate materials so much in order to write imaginative stories.

Amount of time spent writing. Table 36 presents the results of the analysis on the mean number of minutes children in each group spent writing their narrative stories. The time for the third grade group was significantly greater than for each of the four second grade groups. This finding is not surprising in light of the previously noted finding that the third grade group wrote significantly longer stories than the second grade groups, and that a greater proportion of third grade children used organizational elements, connectedness, and relationship words. The Denver Follow Through group spent significantly more time writing than the Denver non-Follow Through group. Though there was no significant difference between these two groups on the length of their stories, there were significant differences in the number of children who used organizational elements, connectedness, and relationship words. There was no significant difference in writing time between the Seattle Follow Through and non-Follow Through groups. It would appear that a greater time spent in writing might not necessarily produce significantly longer stories, but that the amount of time is related to the extent to which children use organizational elements, connectedness, and relationship words in narrative writing.

Report Writing

The pupil checklist was also used to assess the context in which samples of report writing were obtained. Variables which were analyzed included behaviors exhibited by a child after he was asked to write a plan for the activity, specific kinds of behavior occurring during the administration of the report writing task, and the amount of time children spent using the materials and writing their stories.

Child planning. Comparisons of the frequency of occurrence of child planning behaviors were made between second grade Follow Through and non-Follow Through classrooms at each center. Table 37 shows the relative frequencies of occurrence of child planning behaviors during the report writing task at each center. Instead of presenting complete contingency tables for each variable, only the frequencies and percentages of

TABLE 36

Mean Number of Minutes Children Spent Writing Narrative Stories by Group, Grade Level, and Center

		FOLLOW THROUGH		NON-FOLLOW THROUGH	
	Grade	Mean Number of Minutes	S.D.	Mean Number of Minutes	S.D.
Denver	2	13.18	5.81	6.83	2.12
Seattle	2	15.71	5.98	15.38	4.90
New York	3	21.44	12.66	---	---

F = 9.56; df = 4,90; p < .05

Significant Contrasts (t tests):

New York Follow Through > Denver Follow Through*
New York Follow Through > Denver Non-Follow Through*
New York Follow Through > Seattle Follow Through
New York Follow Through > Seattle Non-Follow Through
Denver Follow Through > Denver Non-Follow Through
Seattle Follow Through > Denver Non-Follow Through*
Seattle Follow Through > Denver Non-Follow Through

---

*Significant contrast (p < .05) according to Scheffé test.

TABLE 37

Number (and percent) of Children Exhibiting Evidence of Planning during the Report Writing Task by Group and Center

	DENVER			SEATTLE		
	Follow Through (N = 24)	Non-Follow Through (N = 19)	Fisher Exact Probability	Follow Through (N = 13)	Non-Follow Through (N = 16)	Fisher Exact Probability
1. Wrote a plan	22 (91.7%)	16 (84.2%)	.387	13 (100%)	16 (100%)	----
2. Began plan	17 (70.8%)	12 (63.2%)	.417	13 (100%)	13 (81.3%)	.153
3. Completed plan	4 (16.7%)	1 (5.3%)	.254	13 (100%)	12 (75.0%)	.077
4. Did additional things not mentioned in plan	10 (41.7%)	7 (36.8%)	.498	13 (100%)	16 (100%)	----
5. Copied another child's activity	7 (29.2%)	9 (47.4%)	.182	0 (0.0%)	10 (62.5%)	<.001
6. Did not follow plan	5 (20.8%)	0 (0.0%)	.044	0 (0.0%)	3 (18.8%)	.153

children exhibiting the various planning behaviors are shown in Table 37. No significant differences among groups were found in the number of children who wrote plans, began plans, completed plans, or did additional things not mentioned in plans. The number of children who copied another child's activity in the Seattle non-Follow Through group was significantly greater than for the Seattle Follow Through group. No difference on this variable was found between the Denver groups. The number of children who did not follow their plans was significantly greater for the Denver Follow Through group than for the non-Follow Through group. No difference was found between the Seattle groups.

Child-child and child-tester interactions. To test for differences among groups in the frequency of certain behaviors, *t* tests were computed. Table 38 shows the results of these analyses on the mean number of child-child and child-tester interactions during the report writing task. The mean number fo child-child interactions while using materials was significantly higher for the Denver non-Follow Through group than for the Follow Through group. No significant differences between groups at either the Denver or Seattle center were found on child-tester interactions while using materials or child-child interactions while writing. The mean number of child-tester interactions while writing and the mean number of times children turned to the tester for help with spelling, punctuation, and grammar were significantly higher for Seattle Follow Through than for the non-Follow Through group. No significant differences on these two variables were found among groups at the Denver center. No significant differences among groups were found on the mean number of times children turned to another child for help with spelling, punctuation, or grammar or the mean number of times children voluntarily gave help to another child.

Even though more child-child interactions occurred among Denver non-Follow Through children while using materials than among Follow Through children, the Follow Through children used a higher ratio of combined relationship words in their report writing. Moreover, though Seattle Follow Through children (in comparisons with non-Follow Through) had more child-tester interactions and more often turned to the tester for help, the non-Follow Through group used a higher ratio of combined relationship words in their report writing. It would appear that more frequent child-child interactions while materials were being used, more frequent child-tester interactions while writing was being done, and turning to the tester for grammatical and spelling help had little effect on the use of words denoting the relationship areas.

TABLE 38

Mean Number of Times Child-Child and Child-Tester Interactions Occurred during Report Writing Task by Group, Grade Level, and Center[1]

		DENVER			SEATTLE		
		Follow Through	Non-Follow Through	t tests	Follow Through	Non-Follow Through	t tests
1. Talked to other child while using materials	$\bar{X}$	2.17	2.63	t = 2.4 df = 41 p < .05	2.62	3.00	test not computed
	SD	.70	.50		.65	0	
2. Talked to tester while using materials	$\bar{X}$	1.31	1.58	t = 1.1 df = 30 N.S.	2.08	2.13	t = 0.2 df = 26 N.S.
	SD	.48	.84		.86	.52	
3. Talked to other child while writing	$\bar{X}$	1.87	1.58	t = 1.4 df = 41 N.S.	2.23	2.31	t = 0.3 df = 27 N.S.
	SD	.68	.69		.93	.60	
4. Talked to tester while writing	$\bar{X}$	1.75	1.74	t = 0.5 df = 41 N.S.	2.30	1.38	t = df = 27 p < .05
	SD	.85	.73		.95	.62	
5. Requested help with spelling, punctuation, or grammar from other child	$\bar{X}$	1.30	1.26	t = 0.2 df = 40 N.S.	1.15	1.19	t = 0.2 df = 27 N.S.
	SD	.56	.56		.38	.40	
6. Requested help with spelling, punctuation, or grammar from tester	$\bar{X}$	2.12	2.52	t = 1.7 df = 41 N.S.	2.77	2.06	t = 2.4 df = 27 p < .05
	SD	.85	.70		.60	.93	
7. Voluntarily gave help to another child	$\bar{X}$	1.30	1.33	t = 0.2 df = 39 N.S.	1.38	1.19	t = 1.2 df = 29 N.S.
	SD	.56	.59		.51	.40	

[1] 1 = 0 times; 2 = 1-2 times; 3 = 3 or more times.

Amount of time spent using materials. Since both groups of children in Seattle and the non-Follow Through group in Denver had the maximum score of ten minutes, group variances were zero and _t_ tests between groups could not be performed.

Amount of time spent writing. Table 39 presents the analysis of the mean number of minutes children in each group spent writing their reports. In Denver the Follow Through group spent more time writing than did the non-Follow Through group. No significant difference between groups was found at the Seattle center. It is interesting to note that though there was no difference between the Denver groups in length of story, the Follow Through children were more likely to use relationship words.

TABLE 39

Mean Number of Minutes Children Spent Writing Reports by Group and Center

	FOLLOW THROUGH		NON-FOLLOW THROUGH		
	Mean Number of Minutes	S.D.	Mean Number of Minutes	S.D.	
Denver	10.04	5.11	7.37	2.45	$t = 2.08$ df = 39 $p < .05$
Seattle	12.23	3.27	9.94	3.62	$t = 1.77$ df = 27 N.S.

SUMMARY AND CONCLUSIONS

The T-unit as a standard language unit permitted comparisons of general language development between stories written by primary grade children. In addition to suggesting overall measures of linguistic maturity, the T-unit analysis provided a workable solution to the problem of poorly developed punctuation and cursive writing skills at this level. Extraneous matter, such as redundant subject pronouns, false starts, fragments, and mazes, was treated separately and not included in either the analysis of language maturity or story content. Since no differences in the proportion of children in the various groups employing redundant subject pronouns, false starts, fragments, and mazes were found, it may not be necessary for future studies to be concerned with analyzing such extraneous matter. The difference found between the narrative and report writings in the length of stories and mean length of T-units suggests that it is important to consider the purpose of the writing when drawing conclusions about its quality.

Though no differences in length of responses were found among groups within the second grade level, the fact that significant differences in the length of responses were found between second and third grade groups enrolled in the same language arts curriculum suggests that a similar analysis might be carried out to measure general language growth across time, i.e., from fall to spring within grade levels.

Hunt's and O'Donnell's ratio indices of maturity (mean length of T-units) had not previously been applied below the third grade, so perhaps it is not surprising that no significant differences in mean length of T-unit were found among any of the groups studied. Given young children's lack of facility in writing in the primary grades, however, the T-unit analysis did provide a reliable means of examining the length of intelligible written responses. Once identified, the intelligible portions of written compositions were further analyzed for story content--organization, connectedness, and use of relationship words in narrative stories and use of relationship words in reporting stories.

It is interesting to note in the narrative samples that where significant differences between groups in the proportion of children employing elements of organization (middles and endings) did occur, significant differences in the proportion of children using transitions among those story elements also occurred, though to a lesser degree. Although no significant difference in the number of children employing middles, endings, and connectedness was found between second grade Follow Through and non-Follow Through children in Seattle, a significant difference did occur between Follow Through and non-Follow Through groups in Denver as well as between combined second grade Follow Through groups and third grade Follow Through children. Those same comparisons revealed significant differences in use of certain relationship words. In Denver a significantly greater number of Follow Through children used time words compared with non-Follow Through children, and in both Denver and Seattle, Follow Through children were more likely to use number words. A significantly greater proportion of third grade Follow Through children than second grade Follow Through children employed time, space, and seriation words. Third graders also used a greater number of relationship areas.

Use of relationship words as a measure of content in reporting stories also revealed significant differences among groups. When the mean ratio of combined relationship words to total words was examined, the mean for the Denver Follow Through group was significantly higher than for the non-Follow Through group. However, in Seattle, the mean ratio for the non-Follow Through group was significantly higher than for the Follow Through group.

Child-child and child-tester interactions seemed to have little effect on the writing performance of children in either the narrative or report writing tasks. Child behaviors exhibited during planning in the report writing task also appeared to have little effect on writing performance. Though the amount of time children spent using materials in both tasks did not seem related to writing performance, some evidence does exist to suggest that the amount of time children spent writing their stories was related to the content of their writing. The Denver Follow Through group, who spent significantly more time writing narrative stories than the non-Follow Through group, also had a significantly greater number of children who employed organizational elements, connectedness, and certain relationship words than the non-Follow Through group. In spite of the fact that the Follow Through group spent more time writing their narrative stories, there was no significant difference in length of stories between the two groups. The third grade Follow Through group also spent more time writing narrative stories than the second grade group and had a greater number of children who used organizational elements, connectedness, and certain relationship words. The third grade group, however, also wrote significantly longer stories than the second grade group. In the report writing task, the findings were similar. The Denver Follow Through group spent more time writing than the non-Follow Through group and used a significantly greater proportion of combined relationship words (relative to length of report writing) than did the non-Follow Through group. Again, there was no significant difference in length of stories between the two groups. The one exception to this finding was in the report writing of the Seattle groups where the non-Follow Through group used a significantly greater proportion of combined relationship words than the Follow Through group yet did not write for a greater amount of time.

The limitations of this study, most notably the selection of children and classrooms for pilot testing, prevent definitive statements about the curriculum approaches and their impact on children's writing. Though every attempt was made to choose classrooms at each center with children who lived in the same socio-economic neighborhood, matching samples of children across centers was not possible. The only conclusion across centers which are justified are grade level comparisons of children enrolled in the Cognitively Oriented Curriculum. The selection of classrooms was based on the recommendations of Follow Through field consultants and local curriculum assistants. Though the Cognitively Oriented approach to language arts exists in varying degrees of implementation within the Follow Through program, consultants and curriculum assistants were asked to choose one classroom at the second grade level which was implementing the curriculum approach, and another classroom which was not part of the Follow Through program but which consisted of children from the same geographic and socio-economic neighborhood as the Follow Through children.

That Follow Through students performed significantly better on most content variables than non-Follow Through students at the Denver center is encouraging. Moreover, in light of similar significant differences on selected content variables found in comparisons of second and third grade Follow Through students, the present study provides valuable information about types of content elements that are used by children in the High/Scope language arts curriculum. Finally, this study has been methodologically important in demonstrating the feasibility of this alternative procedure for assessing development in language arts.

REFERENCES

Anderson, H.E., Jr. and Bashaw, W.L. An experimental study of first grade theme writing. *American Educational Research Journal*, 1968, 5, 239-247.

Blount, N.S. Research on teaching literature, language, and composition. In R.M.W. Travers (ed.), *Second handbook of research on teaching*. Chicago: Rand McNally, 1973. pp. 883-925.

Braddock, R., Lloyd-Jones, R., and Schoer, L. *Research in written composition*. Champaign, Illinois: National Council of Teachers of English, 1963.

Chittenden, E.A. *Specification of measures for assessing selected cognitive and affective characteristics of children*. Interim report on activities of July to December 1970 submitted to Follow Through Program, U.S.O.E. Princeton, N.J.: Educational Testing Service, 1970. (mimeo)

DeRivera, M. Academic achievement tests and the survival of open education, n.d. (mimeo)

Diederich, P.B. Definitions of ratings on the ETS composition scale. Princeton, N.J.: Educational Testing Service, n.d. (mimeo)

Follman, J.L. and Anderson, J.A. An investigation of the reliability of five procedures for grading English themes. *Research in the Teaching of English*, 1967, 1, 190-200.

Grimmett, S.A. Situational tests for evaluation of intervention programs: A position. Tucson, Arizona: University of Arizona, Arizona Center for Early Childhood Education, 1970. (mimeo)

Hays, W.L. *Statistics for psychologists*. New York: Holt, Rinehart & Winston, 1963.

Hunt, K.W. *Grammatical structures written at three grade levels*. Research Report No. 3. Champaign, Ill.: National Council of Teachers of English, 1965.

Hunt, K.W. Syntactic maturity in schoolchildren and adults. *Monographs of the Society for Research in Child Development*, 1970, 35, No. 1 (Serial No. 134).

Love, J.M. and Couvares, M.E. Alternative procedures for assessing student progress. Paper presented at the Michigan School Testing Conference, Ann Arbor, Michigan, March 14, 1973.

Lyman, R.L. *Summary of investigations relating to grammar, language, and composition*. University of Chicago Supplementary Educational Monographs, No. 36. Chicago: University of Chicago, 1929.

Meier, D. What's wrong with reading tests? *Notes from City College Advisory Service to Open Corridors*, March, 1972.

O'Donnell, R.C., Griffin, W.J., and Norris, R.C. *Syntax of kindergarten and elementary school children: A transformational analysis*. Research Report No. 8. Champaign, Ill.: National Council of English Teachers, 1967.

Porter, J. Research report. National assessment: Writing. *Elementary English*, 1972, 49, 863-870.

Radcliffe, T. Talk-write composition: A theoretical model proposing the use of speech to improve writing. *Research in the Teaching of English*, 1972, 6, No. 2, 187-199.

Siegel, S. *Nonparametric statistics for the behavioral sciences*. New York: McGraw-Hill, 1956.

Slotnick, H.B. *Writing: National results--writing mechanics*. Report 8. *National Assessment of Educational Progress*. Denver, Colo.: Education Commission of the States, 1972.

Stiff, R. The effect upon student composition of particular correction techniques. *Research in the Teaching of English*, 1967, 1, 54-75.

Veal, L.R. and Biesbrock, E. *The development of an experimental standardized instrument for measuring composition ability in young children*. Technical Report No. 9. Athens, Georgia: University of Georgia, Research and Development Center in Educational Stimulation, 1969.

APPENDIX A

Appendix A

SCORING PROCEDURES FOR T-UNITS

I. Total number of T-units--Code total number of T-units used in story

II. Total number of words--Code total number of words used in story

DO NOT COUNT: redundant subject pronouns
false starts
mazes
fragments

III. Mean length of T-units--Code the mean length of T-units used in story

DIVIDE TOTAL NO. OF WORDS BY TOTAL NO. OF T-UNITS

IV. Total number of redundant subject pronouns--Code number of times redundant subject pronouns used

V. Total number of false starts--Code number of times false starts appeared in story

VI. Total number of fragments--Code number of times fragments appeared in story

VII. Total number of mazes--Code total number of times mazes appeared in story (includes fragments)

VIII. Total number of words in mazes--Code total number of words used in mazes

IX. Ratio of number of mazes to number of T-units

Definition of Categories for T-unit Analysis

I. T-unit

A T-unit is a single independent predication (i.e., both subject and verb are contained) together with any subordinate clauses that may be grammatically related to it. It may be a simple or complex sentence, but not a compound sentence.

Example of a T-unit:

> Once upon there lived[1] an ant he lived[2] in woods the ant was picking[3] up food

Some Guidelines to be Followed in the Analysis of T-units:

1. A coordinating conjunction (and, but, so, etc.) linking two independent clauses will be regarded as the first element in the second clause.

   Examples:

   He saw that a stranger[1] was coming so he went[2] in his hole

   The ant went where[1] the dove was and they both[2] noded (nodded) there (their) heads

2. If the scorer is in doubt whether a conjunction coordinates or subordinates (then, so, and, but, for, etc.) he can test the conjunction by substituting "so that." If the substitution of "so that" results in a grammatical T-unit, no new T-unit is established.

   Examples:

   a. He saw that a stranger[1] was coming so he went[2] in his hole. (2 T-units)
      He saw that a stranger was coming (and) he went in his hole.

   b. She let it drop in the water[1] so the ant could get on the leaf. (1 T-unit).
      She let it drop in the water (so that) the ant could get on the leaf.

c. The ant $\overset{1}{\text{saw}}$ the man so the ant took $\overset{2}{\text{some}}$ the (thing) to pench (pinch) him with so he could not soot (shoot) the dove. (2 T-units)
The ant saw the man (and) the ant took some the (thing) to pench (pinch) him with (so that) he could not soot (shoot) the dove.

3. Attention-claimers (O'Donnell et al., 1967) will be tabulated as part of the total T-unit.

Examples:

Well, when he came back the drove (dove) came. (8 words)

See there was a dove. (5 words)

4. The writer's punctuation will be disregarded in the analysis since the identification of the T-unit depends upon grammatical principles.

Example:

then a $\overset{1}{\text{man}}$ was coming he shot $\overset{2}{\text{for}}$ apples then the $\overset{3}{\text{man}}$ (was) walking

5. Correct verb tense and form of the pronoun as well as the absense of a helping verb or article will be disregarded in determination of a complete T-unit.

Examples:

Incorrect verb tense:	The ant fall (fell) off and fall (fell) strat (straight) into the water. (10 words)
Incorrect pronoun:	Then the ant laft (left) from he (his) has (house). (7 words)
Missing helping verb:	As the ant (was) walking he got on a snail. (9 words)
Missing article:	The ant (was) walking home with (a) big pill. (7 words)

6. When phonetic spellings are used (words which can be deciphered by the coder who has seen the film), the T-unit is considered complete and the scoring of the T-unit is unaffected.

Examples:

a. They had deighsighns (designs) on them. (5 words)

b. He got on a snal (snail) sow (so) he whonot (would not) haft (have to wake (walk). (12 words)

c. The ant came out from (h)is house. (7 words)

d. The man was hret (hurt). (4 words)

e. and the dove got a scared (afraid). (5 words)

f. and the and (ant) ran and get (got) some pokers (8 words)

7. When nonsense words are used, the T-unit is considered completed and the scoring of the T-unit is unaffected. A nonsense word is a word which cannot be understood phonetically by the scorers BUT WHICH FILLS A NECESSARY GRAMMATICAL FUNCTION IN THE T-UNIT (i.e., the T-unit is rendered structurally complete).

Nonsense words, by definition, would include reversals of letters, such as: "ot" for "to," "biddnt" for "didn't," "daird" for "bird," etc.

Examples:

a. and the bierd (bird) gave the ant a geed (8 words) (Though none of the coders could decipher the last word in the T-unit, the context indicates that the "word" is being used as a direct object, a noun)

b. The man past (passed) by the ant ho (house). (7 words)

c. The ant shist home. (4 words)

In instances where articles and conjunctions are used but are written incompletely, credit is also given since it is obvious what the child intended.

Examples:

a. and the ant got on t (the) leave (leaf). (7 words)

b. so the ant climbed his shoe a (and) got some pokers and pinch (pinched) the hunter. (14 words)

In most cases, words can be figured out by relying on the context of the written samples and by phonetics, e.g., "work" for "walked," "soot" for "shoot," etc.

8. In counting words, contractions (aren't, he'd, etc.) will be counted as two words and compound nouns (e.g., dragonfly) will be given the count indicated by the number of bases involved. Pronouns, prepositions, and adverbs will be counted according to the procedure used by O'Donnell et al. (1967), namely each of these parts of speech is given a word count of one. This procedure closely follows morphemic structure as outlined by Francis (1958) with the exception of some adverbs and the prepositions into, onto, throughout, upon, within, and without. Francis categorized these prepositions as compound prepositions whereas we have categorized them as single prepositions on the assumption that most children use them as single words.

Examples:

aren't - are not (2 words)
whonot (wouldn't) - would not (2 words)

dragonfly - dragon fly (2 words)
underground - under ground (2 words)

Pronouns = 1 word count

somebody
nobody
something
nothing
anybody
anyone
anything
everybody
everyone
everything
someone
no one

(Personal pronouns such as himself, themselves, myself, etc., would also be given one word count.)

Prepositions = 1 word count

after
as
at
but
by
down
for
from
in
like
near
of
off
on
out
over
per
round
since
through
till
to
under
up
with

about
above
across
along
amid
among
around
before
behind
below
beneath
beside
between
beyond
despite
during
except
into
onto
throughout
toward
underneath
unlike
until
unto
upon
within
without

against
regarding
concerning
considering
opposite

Compound Prepositions = 2 word count

across from
along with
alongside of
apart from
away from
back of
down from
due to
except for
inside of
instead of
off of
out of
outside of
over to
together with
up to
up with

Adverbs with one word count:

today
inside
outside

II. Redundant Subject Pronouns

Redundant subject pronouns are not counted in the total word count of T-units.

Example:

the ant he went home (4 words)

III. False Starts

A false start is a word or words which have been repeated, serving no grammatical function in the structured context of the T-unit. False starts are not counted in the total word count of T-units.

Example:

In the moreing in the moreing he went to find a dove. (9 words)

IV. Mazes

A maze is a word or group of words that are structurally incomplete according to generally accepted notions about adult standards of language use. These groups of words are noted as mazes but cannot be used in determining T-units.

Mazes appear, in many cases, to be the result of the child:

1. Omitting one word, thereby rendering a group of words, or in some cases, a single word structurally incomplete.

   Examples:

   a. the (   ) was going to soot (shoot) the bird.

   b. Once upon (   ) there lived an ant.

   c. the ant pinched that man rite (right) on his leg. (   ) yeled the dove got a scared and floue (flew) away

2. *Omitting multiple words, thereby rendering a group of words structurally incomplete*.

   Example:

   and when he (   )

3. *Employing more than one unintelligible word, one right after another*.

   Examples:

   a. the he burl orded noded in the water

   b. and the ine dved for ober ine four god.

V. Sentence Fragments (a special category of mazes)

Sentence fragments are grammatically incomplete constructions, i.e., dependent clauses which have subjects and verbs but stand alone and do not logically connect with the following T-unit.

Example:

Because the sun was hotter. The clock said three o'clock.

APPENDIX B

Appendix B

SCORING PROCEDURE FOR TASK I
(REPORTING)

I. Classification

1. Color--Code number of times color is mentioned.
   Ex: the white ball
2. Material--Code number of times material is mentioned.
   Ex: rubber, styrofoam, wood, clay
3. Shape--Code number of times shape is mentioned.
   Ex: round, square, rectangular
4. Use, Type--Code number of times use or type of objects is mentioned.
   Ex: golf ball, steel ball, Xmas ball, Cuisenaire rod, Cuisenaire
5. Texture--Code number of times texture is mentioned.
   Ex: hard, soft
6. TOTAL--Code total number of times the four abovementioned categories were mentioned.

II. Seriation--Code the total number of times a child uses seriation of words.

Seriation words are apt to appear in the following manner:

For balls (diameter, texture)
Ex: largest, smoothest

For rods (length, diameter, weight)
Ex: longest, largest, heaviest

Seriation words would include the following:

-est words (heaviest)
-er words (heavier)
more and adjective (more heavy, more heavy than balls, went down lower than)
less and adjective (less heavy)
middle (the ball was middle)
in-between (the ball was in-between)

III. Number--Code the number of times a child uses Number concepts in each of the following ways:

1. Gross comparison of weight--Code number of times mentioned.
   Ex: heavy, light

2. Gross comparison of size--Code number of times mentioned.
   Ex: big, little, long, small

3. Gross comparison of diameter--Code number of times mentioned.
   Ex: fat, skinny, thin

4. Gross comparison of number--Code number of times mentioned.
   Ex: more plus noun (more sticks)
   more plus noun plus 'than' plus noun (more sticks than balls)
   much more plus noun (much more sticks)
   many more plus noun (many more sticks)

5. Equivalencies (stating things are equal or not equal)--Code number of times mentioned.
   Ex: the two red ones were the same
   it took 13 rods to get the same
   a blue rod equals 2 white ones

6. Combining of sets (evidence of addition process)--Code number of times mentioned.
   Ex: it took 3 brown rods plus 2 red ones to make 5
   there are 2 more red ones than blue ones
   there are 2 more sticks than balls
   it took 2 more red ones to balance it than green ones

7. Counting (stating number of items in a set)--Code number of times mentioned.
   Ex: it took 13 Cuisenaire rods
   there are 3 balls

8. TOTAL--Code total number of times Number concepts are mentioned.

IV. Space--Code the total number of times a child uses spatial words.
   Ex: in, into, under, on top of, down, up

V. Time--Code the number of times a child uses temporal words in each of the following ways:

1. Then--Code number of times "then" is mentioned.
   Ex: then he went to the store

2. Other time words--Code number of times other time words are mentioned.
   Ex: first, next, while, after, later, when

3. TOTAL--Code total number times Time words are used.

APPENDIX C

Appendix C

SCORING PROCEDURE FOR TASK II (NARRATING)

Child's Response--Code type of response to task.

1 = Reported what he did with the objects
2 = Wrote a fantasy story
3 - Both of the above

IF TYPE 1 OCCURRED, DO NOT CODE REST OF STORY.

IF TYPE 3 OCCURRED, CODE FOR ONLY THAT PART OF STORY. (The T-unit analysis will pertain to entire story, however.)

Content--Code presence or absence of each of the following elements

I. Organization

Evidence of Beginning--Code yes or no.

1 = Yes
2 = No

States topic; sets the scene by time or space; introduces character(s).

Evidence of Middle--Code yes or no.

1 = Yes
2 = No

Introduces new character; change of section; change of space; change of time; conflict or obstacle introduced.

Evidence of Ending--Code yes or no.

1 = Yes
2 = No

Resolution of conflict; rejoining after separation; establishes causal link (on basis of time, space, or causal patterns) makes a prediction; new insight.

II. Logical Development (ideas tied together; transitions between story parts)

Is there an obvious connection between the beginning and the middle?--Code yes or no.

1 = Yes
2 = No

Is there an obvious connection between the beginning and the middle and the end?--Code yes or no.

1 = Yes
2 = No

III. Supporting Detail

Time--Code yes if any time words were used.

1 = Yes
2 = No

Space--Code yes if any space words were used.

1 = Yes
2 = No

Seriation--Code yes if any seriation words were used.

1 = Yes
2 = No

Classification--Code yes if any descriptive words were used.

1 = Yes
2 = No

Number--Code yes if any number concepts were used.

1 = Yes
2 = No

APPENDIX D

Appendix D

SCHEDULES OF INSTRUCTIONS AND MATERIALS USED IN ADMINISTERING LANGUAGE ARTS ASSESSMENT TASKS

Directions for Test Task I-1973 (Reporting)

Enter identifying information on Pupil Checklists.

Seat all children around one table, set up the task materials in front of each child and say:

1. HERE ARE SOME THINGS. TAKE A LOOK IN YOUR BAG AND SEE WHAT YOU HAVE.

   Allow each child only to look at his materials for a minute or two. He should not start using them.

2. LATER ON I'M GOING TO ASK YOU TO TELL ME EVERY THING YOU CAN ABOUT THESE THINGS. BUT FIRST, WRITE DOWN ON YOUR PAPER WHAT YOU COULD DO WITH THESE THINGS.

   Pass out pencils and paper (with child's name on it and a "P" to indicate to us this is his plan).

3. WRITE DOWN ON YOUR PAPER WHAT YOU COULD DO WITH THESE THINGS.

   Allow one to two minutes. Do not use the word "plan." Collect papers.

4. AFTER 10 MINUTES I'M GOING TO ASK YOU TO WRITE DOWN EVERYTHING YOU CAN ABOUT THESE THINGS. USE ONLY YOUR OWN THINGS.

   After 8 minutes are up, say:

5. YOU ONLY HAVE A COUPLE OF MINUTES TO FINISH.

   After 10 minutes are up, say:

6. OKAY, TIME IS UP. PUT YOUR THINGS TO THE SIDE (OR TO THE MIDDLE OF THE TABLE).

   Materials should stay where the child can still see them. Pass out paper (with children's name already on them) and pencils and say:

7a. WHAT CAN YOU TELL ME ABOUT THESE THINGS? WRITE DOWN EVERYTHING YOU CAN TELL ME ABOUT THESE THINGS. AFTER YOU ARE FINISHED WRITING, SIT QUIETLY UNTIL EVERYONE ELSE IS DONE.

   Check the time that each child starts to write on his checklist.

   If child doesn't respond, say again:

7b. WRITE DOWN EVERYTHING YOU CAN TELL ME ABOUT THESE THINGS.

If a child stops before 15 minutes have passed, say only once:

8. IS THERE ANYTHING ELSE YOU CAN TELL ME ABOUT THESE THINGS?

If child refuses, do not encourage him further. Note the actual amount of time he spent writing on his checklist. If he becomes fidgety, you may quietly ask him to draw a picture.

After 15 minutes have passed, put a small 'x' on each paper to mark his place so far. Let them continue writing as long as they wish.

Note the actual amount of time each child finishes writing on his checklist.

Additional Comments

Children are permitted to talk during the task but are not permitted to share materials. The tester should not help out in any way or offer suggestions to the child.

Children are permitted to talk and to ask each other for help with spelling, punctuation and grammar during the writing task. Only if asked may the tester give help with spelling, punctuation or grammar. The tester should refrain from helping in any other way.

Complete the Pupil Checklist for each child immediately after the writing task has been completed.

Materials for Each Reporting Task Kit

1. One Scales

   These can be found in Follow Through first grade classrooms. They are found in the AAAS science programs, Part B, Exercise N (or drawer N), Measuring No. 5. There are 8-10 per kit so every Follow Through first grade classroom should have at least that many.

2. Three Balls

   One clay ball (with ball bearing inside)
   One styrofoam ball
   One rubber ball

3. Three Blue Pegs (of varying diameters and lengths)

4. Twenty (20) Cuisenaire Rods

   10 red
   5 green
   3 neutral
   2 orange

Directions for Test Task II - 1973 (Narrating a Story)

Enter identifying information on Pupil Checklists. The words "Once upon a time" should be printed in big letters on a blackboard or sheet of paper where children can see them.

1. I'M GOING TO ASK YOU TO WRITE A MAKE-BELIEVE STORY WHICH MIGHT BEGIN WITH "ONCE UPON A TIME..."

   Point to printed words on blackboard.

2. FIRST, I'M GOING TO GIVE YOU SOME THINGS TO USE TO HELP YOU MAKE UP THE STORY. YOU CAN SIT DOWN WHERE YOU HAVE ROOM TO WORK.

   Children sit down, preferably on the floor or around a big table.

   AFTER 10 MINUTES I'M GOING TO STOP YOU AND ASK YOU TO MAKE UP A STORY AND WRITE IT DOWN.

   Give each child a box of things. Children are allowed to engage in cooperative play for this period of time.

   After 8 minutes have passed, say:

3. YOU ONLY HAVE A COUPLE OF MINUTES TO FINISH.

   (Note the actual amount of time each child spent using the materials on his checklist.)

4. OKAY, TIME IS UP. PUT ALL YOUR THINGS BACK IN THE BOX AND COME TO THE TABLE.

   Materials should remain where the children can see them.

   Pass out paper (with each child's name already written on paper) and pencils and say:

5a. NOW, I WANT YOU TO WRITE A MAKE-BELIEVE STORY OR PRETEND STORY. YOU MIGHT WANT TO START YOUR STORY WITH "ONCE UPON A TIME..." WRITE WHATEVER PRETEND STORY YOU WANT TO WRITE. AFTER YOU HAVE FINISHED YOUR STORY, SIT QUIETLY UNTIL EVERYONE ELSE HAS FINISHED WRITING THEIR STORY.

If child doesn't respond, repeat:

5b. WRITE WHATEVER MAKE-BELIEVE OR PRETEND STORY YOU WANT TO WRITE. YOU MIGHT WANT TO BEGIN WITH "ONCE UPON A TIME..."

If a child stops before 15 minutes have passed, say only once:

6. IS THERE ANYTHING MORE YOU'D LIKE TO SAY IN YOUR STORY?

If child refuses, do not encourage him further. Note the actual amount of time he spent writing on his checklist. If child becomes fidgety, you may quietly ask him if he would like to draw a picture of his story.

After 15 minutes have passed, put a small 'x' on each paper to mark the story thus far. Let them continue writing as long as they wish but note the actual amount of time each child spent writing on his checklist.

Additional Comments

While the children are using the materials, the tester should not help out in any way or offer suggestions to the children.

While writing, children are permitted to talk and to ask each other for help with spelling, punctuation and grammar during the writing task. Only if asked may the tester give help with spelling, punctuation or grammar. The tester should refrain from helping in any other way.

Complete the Pupil Checklist for each child immediately after the writing task has been completed.

Materials for Each Narrating Task Kit

1. One cardboard box (assembled)

2. One car (made of wood and bottle caps)

3. Seven family persons

    1 dog
    1 girl
    1 boy
    1 grandma
    1 mother
    1 father
    1 baby

APPENDIX E

Appendix E

DEVELOPING CHILDREN'S WRITING IN THE COGNITIVE CURRICULUM

Carolyn Jackson
April 1973

INTRODUCTION

In the Cognitive Curriculum the teaching of reading and writing is incorporated into the daily routine and is an integral part of the plan-work-represent and evaluate sequence. During this daily routine children choose from a variety of learning centers the activities they wish to pursue. Each day, children choose an activity, make a plan for the activity, follow their plan, represent their activity in some way, and discuss in a group setting what they have done. The child's development of reading and writing skills is a natural outgrowth of recording the events he experiences and transmitting these experiences to others.

During planning the child first verbalizes, then describes in writing what he is going to do during work time. Sometimes he makes a list of the things he is going to use. The teacher helps to clarify and extend his thoughts with appropriate questions. During work time the child carries out his plan. He may involve himself directly with reading and writing activities by reading in the quiet area or writing a story in the bookmaking area or he may involve himself indirectly through such things as: games, listening activities, charts showing the progress of a project, and through verbal interaction with others. Writing and drawing during representation time requires the child to think about what he has done and to record these thoughts in some way. It is during representation time, primarily, that writing-reading skills are developed. Reading skills are emphasized during evaluation time when the child verbalizes the thoughts he has recorded as part of his representation.

The development of reading and writing in the Cognitive Curriculum is a generative process for the learner. The child writes and reads words that have personal meaning for him. They are his words and are based on his experiences. The content of writing and reading are internal to the child, not imposed on the child by external sources that decide what is good for him. Instead of first learning to read the words of others the child learns to read his own words. What is learned and when it is learned is controlled by the learner, himself. Daily efforts at writing provide many opportunities for meaningful practice and the confidence that writing is an important way to communicate.

DICTATION

Before a child can learn to express himself with written words he must understand that writing is talk written down. Group experiences in which children make comments that are written down by the teacher help to convey this idea. In these situations each child's name should always be included as evidence of authorship.

A more individual situation occurs during representation time when a child learns that what he says can be written down. The teacher uses his words to label parts of a picture or takes dictation of the child's story. At this time words are re-read several times as the teacher points to the words. Similarity in letter shapes and words may be noted. At evaluation time the child can show his representation to the group and tell about the experience. In addition the teacher reads the written words and the child repeats them.

Young children, when they first dictate, will be unable to express or recall their experiences with much accuracy or detail. Labeling parts of objects or people may be the extent of his capabilities. Later the child will be able to express his experiences accurately but will be unable to give details. In time, inclusion of details will occur as the child gains confidence, but there may still be no attempt to read.

TRACING

The next step in the development of writing and reading involves the child in tracing over the letter of his dictated story. Use of a crayon or flat-tipped, felt pen makes this a fun activity and provides the contrast necessary to distinguish the child's marks from those of the teacher. Child-drawn pictures, or models, or charts, or pantomines, or magazine cut-outs, or other kinds of representation should accompany the child's words because they help clarify thinking and reinforce the words which the child has used.

COPYING

After he has had some experience with tracing the child may show an interest in copying words he has dictated. He may already be able to recognize his name and this will probably be the first word which he will learn to print. The teacher provides a model when he prints the child's name, and other words the child dictates. The child should be allowed to print as best he can without having to conform to standards for spatial placement and proportion. As he is ready for more varied copying experiences he can make designs using circles, semi-circles and straight lines. Tracing around letters and use of letter stencils also help him feel the shapes of letters.

When the child begins to copy his dictation teachers may find that the task is too tedious for completion. At this stage a child's verbal ability often outstrips his muscular control and physical endurance. Then, too, children seem to take delight in producing a large quantity of words. Thoughts are dictated for the sake of doing it and not always because of pertinent content. Children will often stretch out words to cover a lot of space so that an illusion of much writing is created. This is a satisfying experience to the child and should be tolerated along with the incorrect hyphenation which usually occurs. Teacher help is necessary only when requested by the child. Corrections and efforts to get the child to finish the task are inappropriate. As the child repeats the task daily he will gain increasing control and will dictate an amount he can manage to copy.

At first the task of copying will be just that. The child's energies will be absorbed in forming letters and he will be unable to convert the printed words to spoken words with much accuracy. Gradually, however, straight copying will be followed by copying with memory-reading and then copying, memory-reading, and use of a small sight vocabulary. Eventually the child will be able to share the task of recording the dictation by printing familiar words. He should be encouraged to do so as often as possible and as long as it seems to be a rewarding experience.

After children learn to write a few words they use them again and again in a single story. Work time experiences, if satisfying to the child, are repeated and expanded over a succession of work periods, thus allowing repetition of words in subsequent story writing sessions. Gradually the child learns to write more and more words so that the teacher rather than being the primary recorder, plays a supportive role as the child writes his story.

WRITING-READING

The group setting of story writing sessions provides peer support for the beginning writer and initial stimulation for writing. A multi-age grouping lends itself particularly well to this situation. Younger children imitate older ones and receive spelling and reading help with the knowledge that others are concerned for their progress. The older children, in turn, reinforce their own skills when they give help and increase their feelings of competency. Another factor which stimulates the use of language is the feeling of importance that comes when one child writes about another and reads the account to the group. This positive reinforcement between children, coupled with supportive guidance from the teacher, creates an atmosphere in which children gain the tools with which to read and write when they need them.

The teaching of language arts skills such as spelling, phonics, grammar, and punctuation during representation and evaluation time is incidental teaching in that there is no set order in which lessons are presented. It is individualized and offers on-the-spot help as the need arises. It allows the child to proceed at his own speed and provides for the meaningful increase of vocabulary because reading and writing are immediately tied to concrete experiences. As children write more they use more descriptive words and include more specific details in their accounts.

The group process of writing and sharing ideas serves to motivate and extend learning. Beginning writers often practice writing letters after they have finished writing their story. Children ask to be shown how to use cursive writing. Reading aloud by the child leads to self-evaluation of writing skills and the need for spelling standards becomes apparent when children read each other's stories.

During initial stages of writing, some children develop their own system for spelling words. Others, perhaps more dependent, ask for spelling help and can offer the stimulus for an impromptu phonics lesson by the teacher. Children often spell unknown words phonetically though incorrectly and should be allowed to do so since correcting while the child is writing interrupts the flow of ideas and inhibits his use of language. Errors seem to correct themselves in time. If the child is allowed to pursue his natural desires to do things as peers and grown-ups do he will evaluate his own work and correct his errors when he confronts discrepancies between his writing and that of others.

Children need to be self-directive in their writing and should be encouraged to help themselves rather than to rely on someone else to tell them what to do. When a child asks for spelling help, aid should be given and the word should be recorded in a personal dictionary so that he has a reference for future use. In addition, word lists with pictures when possible can be posted in the room at appropriate times and places. When the need arises the teacher can direct children to the Dolch list or lists of words resulting from a field trip, a learning center, or a phonics lesson.

CREATIVE WRITING

As children become more adept at recording their work time experiences they often want to create imaginative stories. Making books at the bookmaking center becomes a serious venture during work time, perhaps stimulated by art activities or products from the block area or sand table. Children begin to express inner feelings and show increasing ability to organize ideas through repeated efforts to write. Creative stories usually result in a lengthier production than the writing produced during evaluation time and may necessitate planning for the inclusion of pictures at appropriate points in the story.

At first storywriting is more fanciful than creative. The child may write about himself, for instance, in an unrealistic way. He may project himself into situations without logical development of a story. Children often begin a story about one situation and end on another. There seems to be little organization of ideas and little sense of reality. Later, stories usually show a temporal sequence in the events that occur. There is, however, little attention to details and plot. The child can use characters other than himself though they may be thinly disguised. A third stage evolves when the child includes in his story a logical beginning, middle and end. He begins to develop a plot. He may set the stage for something to happen but resolve the situation abruptly without explaining how this came about. In a final stage, stories show evidences of paragraphing although the child may not use standard spacing practices. In this situation the child groups sentences together which relate to one particular aspect of his story. He is increasingly able to keep in mind and develop the separate components of the story and tie them together in a meaningful whole: details are included, characters are developed, and the plot is resolved in a realistic way.

The primary typewriter is a useful tool for stimulating creative writing. The more mature child, whose thoughts flow, seems to find satisfaction in using the typewriter instead of the more laborious handwritten method. Punctuation marks on the keys arouse curiosity, margins and spacing become important. The typewriter serves the function of an efficient tool for the serious business of creating and communicating important information.

The younger child uses the typewriter not so much for communication but as an instrument that allows the exploration and manipulation of letters. Children often punch out a series of letters and ask what they say. Copying nursery rhymes or stories from books seems to be a gratifying experience and a stimulus for reading. With repeated experience the child soon finds that he can arrange the letters to form his own words.

Use of a typewriter by the younger child focuses his attention on the mechanics of writing in several ways. First of all, left-to-right progression is reinforced in the very process of operating the machine. The spacing of words is emphasized by pushing the space bar. The teacher can help the child remember to use the space bar by marking spaces after each word in the dictation to be copied. The relationship of capital and small letters also becomes important since the letters on most typewriter keys are capitalized. Lettering guides showing both capital and small letters should be placed near the typewriter for easy access.

WRITING-READING IN PROBLEM-SOLVING SITUATIONS

The steps described earlier have focused on fostering the development of writing and reading in young children. The final step in this sequence occurs when these tools are used by children in a spontaneous and functional way to help solve problems. This first occurs when a child puts his name on his paper to distinguish ownership from that of others but an alert teacher will be aware of many situations in which children can use their new-found skills in meaningful ways. Here are a few examples of problem solving situations in which writing was used:

- use of the chalkboard to record and organize data
- letter-writing and card-making
- writing notes or instructions in how to make something
- reading for information, for example, how to care for the class pet
- making scripts for shows

- maintaining a journal of important events for use as a keepsake
- planning for a field trip
- making a shopping list
- copying songs
- making rules of conduct

Children enjoy the sense of power they have when they can put reading and writing to their own use. A file containing the writing of each child helps him to see the progress he has made and encourages more elaborate collections. Books with chapters and loose leaf binders of daily activities are not uncommon.

The steps described above comprise a process for the aquisition of language skill and ability which capitalizes on the cognitive focus of the High/Scope curriculum. Active experiences and thought are embodied in language through expression and representation. Thinking gives both form and content to communication in writing and reading. The daily application of this process will help children develop a mastery of language closely linked to and in support of his intellectual and social development.

SEQUENCE OF WRITING-READING DEVELOPMENT

1. Dictation
    a. inability to express or recall situation with accuracy
    b. situation expressed accurately but details lacking
    c. details included but no attempt made to read from memory

2. Tracing

3. Copying
    a. straight copying
    b. copying with memory-reading
    c. copying memory-reading, use of sight vocabulary
    d. copying, writing some words, and use of sight vocabulary

4. Writing and Reading
    a. functional learning of spelling, phonics, grammar and punctuation
    b. self-evaluation of skills and self-direction
    c. reading the words of others

5. Creative Writing
    a. fanciful--little organization of ideas or sense of reality
    b. temporal sequencing of events but few details and no plot
    c. logical beginning, middle and abrupt end without logical development
    d. paragraphing--can develop separate components of story and tie them together into meaningful whole

6. Use of Writing and Reading in Problem Solving Situations
    a. spontaneous and functional use of reading and writing
    b. development of critical reading

APPENDIX F

Appendix F

BRIEF DESCRIPTIONS OF THE LANGUAGE ARTS APPROACH USED IN NON-FOLLOW THROUGH SECOND GRADE CLASSROOMS

Seattle

Language arts instruction was based on the English II series by Laidlaw. Questions were written on the blackboard which different groups of students were asked to answer using complete sentences. Children were encouraged to write creative stories every other week.

Denver

Language arts instruction was centered around use of basal readers. Children were divided into three ability-level groups to read orally in a round-robin fashion. Some children also engaged in silent reading activities. The lowest ability group was given a DISTAR reading lesson every day by another teacher outside the regular classroom. There was little opportunity, if any, provided for children to write.

APPENDIX G

Appendix G

PUPIL CHECKLISTS FOR LANGUAGE ARTS ASSESSMENT TASKS

Pupil Checklist (Reporting Story)

Identifying Information

Child's Name ________________ Sex _____ Age _____ Grade _____

Classroom Teacher ________________ Center ________________

Tester's Name ________________ Date ________ Time of Day ____

1. The child (check as many as applicable)

   wrote a plan ________
   began his plan ________
   completed his plan ________
   did additional things not mentioned in his plan ________
   copied another child's activity ________
   did not follow his plan ________

2. Amount of time child used materials (max. 10 min.) ________

3. To whom did child talk while using materials? (circle no. of time

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

4. Amount of time child spent writing ________________.

5. To whom did child talk while writing? (circle no. of times)

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

6. From whom did the child request help with spelling, punctuation or grammar? (circle no. of times)

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

7. Did the child voluntarily give help to at least one other child? (circle no. of times)

   0x 1-2x 3+x

8. Note any extenuating circumstances which, in your opinion, might have affected the performance of this group. (Example: "One child voiced she didn't want to do this task and the rest of the group followed suit," or "One child's complaining or disruptive manner affected the rest," etc.).

Pupil Checklist (Narrating Story)

Identifying Information

Child's Name ____________________________ Sex____ Age____ Grade____

Classroom Teacher ______________________ Center____________________

Tester's Name _______________________ Date_________ Time of Day____

1. Amount of time child manipulated materials (max. 10 min.) ____

2. To whom did child talk while using materials? (circle no. of times

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

3. Did the child engage in cooperative play with one or more other children? (circle amount of time)

   Not at all Less than ½ of the time More than ½ of the time

4. Amount of time child spent writing ___________________

5. To whom did the child talk while writing? (circle no. of times)

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

6. From whom did the child request help with spelling, punctuation or grammar? (circle no. of times)

   Other child 0x 1-2x 3+x Tester 0x 1-2x 3+x

7. Did the child voluntarily give help to at least one other child? (circle no. of times)

   0x 1-2x 3+x

8. Note any extenuating circumstances which in your opinion might have affected the performance of this group. (Example: "One child voiced she didn't want to do the task and the rest of the group followed suit," or "One child's complaining or disruptive manner affected the rest," etc.)

APPENDIX H

Appendix H

EXAMPLES OF NARRATIVE WRITING HAVING ELEMENTS OF ORGANIZATION AND CONNECTEDNESS

I. Narrative writing sample having a beginning, no middle, and no ending:

Once upon a time there lived a family/A boy was sad/

II. Narrative writing sample having a beginning, a middle and no ending (no connectedness between beginning and middle):

Once there was a boy who did not like his sisters/ and all at once the sherry came/then there dad came and gave them a licking/the grandmother came with a dog/

III. Narrative sample having a beginning, a middle, and no ending (connectedness between beginning and middle):

Once upon a time a Dog was in the car/then he jumped out of the car into the lake/then a frog jumped out the lake into the car/

IV. Narrative writing sample having a beginning, no middle, and an ending (no connectedness):

Once upon a time there were 7 happy people from Texas/There were two twins, 1 cowboy, 1 Mad ballplayer. They lived to be 109.

V. Narrative writing sample having a beginning, a middle, and an ending (connectedness between beginning, middle, and ending).

Oh no not again

Dad went to work/and the others went to bed/Then a robber came/The dog woke up/Then he bit the robber once then again, and again/Then the father came home and he took him to the police/and they took him to jail/and then the next day another robber came/The dog said "oh no not again!"/Then the robber stole some money/Then when the father came home he said "oh no not again"/Then he called the police/Then they said "oh no not again/and they came/the robber said oh no not again/and they put him in jail/

APPENDIX I

Appendix I

SAMPLES OF PROCESSED NARRATIVE AND REPORTING STORIES

I. Narrative writing sample:

> Once upon a time there Lived this family of 7 people/and it was a boy who was bad/one day he fussed at his sister/and he never had a whiping befoure/but boy how his mother got on him/he new how a whiping was Like/and he never act bad to his Sister again/

1. T-unit Analysis

Total T-units	7
Total words	57
Mean length of T-units	8.2
Redundant subject pronouns	0
False starts	0
Fragments	0
Mazes	0
Total words in mazes	0
Ratio of mazes to T-units	0

2. Child's Response 2

1 = Reporting
2 = Narrating
3 = Combination

3. Organization

1 = Content element is present
2 = Content element is absent

Evidence of a beginning	1
Evidence of a middle	1
Evidence of an ending	1
Connection between beginning and middle	1
Connection between beginning, middle, and ending	1
Use of time words	1
Use of space words	1
Use of seriation words	2
Use of classification words	1
Use of number words	1

II. Reporting sample:

The little pice of clay wights more than the big ball/The two green rods are the same as six red rods/One orange rod is the same as two red rods and one green rod/The white ball is liter than the clay/The red ball is hever than the white ball is/

1. T-unit Analysis

Total T-units	5
Total words	56
Mean length of T-units	11.2
Redundant subject pronouns	0
False starts	0
Fragments	0
Mazes	0
Total words in maze	0
Ratio of mazes to T-units	0

2. Content--Number of times each relationship area is mentioned.

Classification

Color	8
Material	2
Shape	0
Use, Type	0
Texture	0
TOTAL	10

Seriation	3

Number

Gross comparison of weight	0
Gross comparison of size	2
Gross comparison of diameter	0
Gross comparison of number	0
Equivalencies	2
Combining of sets	0
Counting	5
TOTAL	9

Space	0

Time

Then	0
Other time words	0
TOTAL	0

SECTION 4

FORMATIVE EVALUATION OF PROGRAM IMPLEMENTATION IN FOLLOW THROUGH

September, 1973

Prepared by

John M. Love
M. Elizabeth Couvares

High/Scope Educational Research Foundation
125 N. Huron
Ypsilanti, Michigan 48197

The research reported herein was performed pursuant to Grant No. OEG-0-70-4919 with the Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Point of views and opinions stated do not, therefore, necessarily represent official Office of Education opinion or policy.

The Need for Evaluation of Program Implementation

One of the most neglected aspects of curriculum evaluation efforts is a documentation of the ongoing process that may be determining the outcomes that are typically assessed. This process documentation is often neglected because of the expense of collecting systematic data on the complex set of variables that define the process of a curriculum. Accompanying this lack of documentation is a failure to provide meaningful feedback to the persons responsible for the implementation of the program so that modifications in procedures can be made where necessary.

Systematic observation of the classroom behavior of teachers and children produces a wealth of data on the frequency of occurrence of specific categories of observable behavior. Such an evaluation effort is not practical in most educational settings, however, because of the time and expense involved in developing the observation system, training observers, establishing inter-observer reliability, collecting, processing, and analyzing vast amounts of data, and summarizing the results in a usable form within a reasonable time period. Because of the data reduction and analysis problems associated with classroom observation research, too much time elapses between the observation and the reporting for the results to be of use to the teachers or administrators who are concerned with the quality of program implementation. So, although classroom observations can provide the most systematic data on implementation, they typically cannot serve any formative function with respect to the implementation process itself.

Because of the importance of obtaining some relatively objective index of the extent to which a curriculum is being implemented in a large number of classrooms in widely separated parts of the country, the Follow Through curriculum and evaluation staff at the High/Scope Foundation developed the Implementation Matrix. Basically, the Implementation Matrix is a format for obtaining global ratings on a number of variables judged to be central to the process and formative evaluation tool. As a process tool, it must be viewed as a relatively crude method[1]. Its primary function, therefore, is that of a formative evaluation instrument--formative in the sense of producing information on the implementation process that can be used by teachers, aides, High/Scope curriculum consultants, and other school personnel in altering the processes occurring in the classroom.

---

[1] A systematic classroom observation procedure for collecting process data has been in use by the High/Scope Foundation for the past year. For a complete report of the procedures and results of the classroom observation study, see Volume III: A study of classroom interactions in four Follow Through sites.

Formative Evaluation in the Context of Implementation

In their handbook on evaluation, Bloom, Hastings, and Madaus (1971) made the following comment about formative evaluation:

> If evaluation is to aid both the teaching and learning processes, it must take place not only at the termination of these processes but while they are still fluid and susceptible to modification. Formative evaluation, as the name implies, intervenes during the formation of the student, not when the process is thought to be completed. It points to areas of needed remediation so that immediately subsequent instruction and study can be made more pertinent and beneficial. (Bloom, et al., 1971, p. 20)

If the term "classroom", or "curriculum", or "teaching-learning process" is substituted for "student" in the above quotation, then the statement becomes a fair description of the evaluation effort that is the subject of this report.

When the sponsor of a model curriculum is responsible for implementing a particular teaching-learning process in a wide variety of field settings (as in Project Follow Through), the need for formative evaluation is especially critical. The cognitively oriented Follow Through model sponsored by the High/Scope Foundation is operating in some 162 kindergarten through third grade classrooms in ten school systems throughout the United States. The task of "delivering" the curriculum on such a scale is shared by field consultants and curriculum specialists based in Ypsilanti and the curriculum assistants (CAs) at each Follow Through center. The CA, who is a member of the local community, serves as the resident "expert" on the curriculum. The work of the CA and the field consultant in identifying needs of teachers, providing training materials, and monitoring progress requires accurate and systematic information on the status of implementation of each classroom. In addition to providing this information, the Implementation Matrix can serve an important teacher-training function in that teachers as well as CAs are made more conscious of explicit program goals, receive practice in articulating the classroom practices by which goals are manifested, and are made more aware of how implementation is carried out.

In summary, there are four ways in which the data provided by the Implementation Matrix could be used by teachers, CAs, and consultants:

- To stimulate discussion about curriculum implementation, knowledge of program goals, and classroom functioning
- To identify and define areas in which changes and modifications should occur
- To point out those classroom variables that need focused attention across all classrooms (for purposes of center workshops and other training sessions)
- To map out appropriate training strategies (establishing priorities, utilizing strengths of particular classrooms, determining appropriate training materials and procedures, etc.)

Instrument Development

The important information for formative evaluation is the progress of classrooms toward the attainment of specific levels of operation necessary for a well-implemented cognitively oriented classroom. Input from Follow Through research and field service staff during the summer of 1972 was combined with that of CAs at a workshop in September, 1972 in order to identify particular classroom variables considered important for a well-implemented cognitive classroom. These variables fell into the following categories:

- Room Arrangement
- Daily Routine
- Child Process
    - Plan
    - Work
    - Represent
    - Evaluate

- Daily Planning and Evaluation
  - Process
  - Outcome
  - Basis
- Teacher Direction
- Child-Teacher Interaction
  - Teacher-initiated instruction
  - Work time
- Learning Experiences
  - Skills
  - Cognitive development
  - Commercial materials

An attempt was also made at that time to define levels of operation found in existing classrooms for each of the fifteen variables. What resulted were four identifiable levels of operation which were outlined in the form of a matrix (see Figure 1). Each level of implementation corresponded to specific conditions in the classroom and specific teacher and child behaviors. Though the operation levels represented on the matrix reflected what might be found in existing classrooms (based on the actual experiences of both field consultants and CAs), the highest level (D) reflected the most appropriate operation of the Cognitive Curriculum Model. In general, one would describe classrooms operating at these levels as follows:

Level A - Teacher-directed classroom allowing for little or no child-initiation

Level B - Teacher-directed classroom allowing for some child-initiation

Level C - Child-initiated classroom with little teacher direction

Level D - Implementation of the Cognitive Curriculum: interaction is both child-initiated and teacher-directed

Since it was very important to develop a useful instrument by the end of the year, it was decided to collect the suggestions of teachers, CAs, and field consultants after the fall ratings were completed. These resulted in several minor changes in the descriptions of some of the levels for some

FIGURE 1. IMPLEMENTATION MATRIX USED IN FALL, 1972.

	VARIABLE	A	B	C	D
1	ROOM ARRANGEMENT	Teaching stations but no learning centers	Teaching stations plus 1 or 2 learning centers without a specific focus	Teaching stations plus learning centers; activities, stimulating but unrelated	Teaching station closely related to learning center
2	DAILY ROUTINE	Children rotate among teaching stations	Directed instruction. Interest centers used as free play	One-half day teacher initiated; one-half day pupil initiated	Integration of entire day. Directed teaching is related to child's activity at learning centers.
	CHILD PROCESS				
3	Plan	No opportunity for planning; no work time	Children assigned to center by adult to facilitate routine	Child chooses center but makes no specific plan for activity	Child makes choice of center and discusses plan with teacher
4	Work	not applicable	Adult assigns activity to be done at center	Work undertaken varies with passing interest	Child completes plan
5	Represent	not applicable	No representation, or representation directed by teacher	Representation at child's discretion	Child represents experience in his way
6	Evaluate	not applicable	No evaluation, or simple reporting of presence	Voluntary show and tell or mandatory reporting	Child evaluates plan & uses evaluation to make new plans, to extend or modify previous plans
	DAILY PLANNING & EVALUATION				
7	Process	Head teacher does planning	Team plans together but each member for his own area	Team integrates plans. No developmental evaluation of individual children	Planning & evaluation are a result of group process
8	Outcome	Single activities for all children	Activities planned for different groups. Children grouped according to "ability"	Activities and grouping are a direct outcome of team planning and evaluation	Planning for individual children is a result of ongoing evaluation (whole team)

9	Basis	Concern for skill development and grade level expectation	Awareness of cognitive structures (i.e., class, seriation, etc.)	Awareness of levels of representation and the importance of real experiences	Integration of levels of representation, cognitive structures and skill development
10	TEACHER DIRECTION	Teacher domination of interaction; control of content and process	Teacher direction with opportunities for children to choose among restricted alternatives	Teacher provides opportunities for peer interaction and interaction with materials but little direction	Teacher structures environments so that children can initiate activities and work independently
11	CHILD-TEACHER INTERACTION Directed Teaching	Limited opportunities to initiate activities	Few opportunities to initiate original activities but within planned activity there is room for divergent responses	Strong evidence of divergent responses during directed teaching	Divergent responses used as a basis for further teaching
12	Work Time	No work time	Children's alternatives and behavior structured by teacher	Most activities initiated by child; little teacher interaction	Child chooses activity. Teacher interacts with child.
13	LEARNING EXPERIENCES Skills	Dominated by skill development	Same as level A	Skill development incidental (not planned for)	Skill development integrated with other activities (planned for)
14	Cognitive Development	Experiences determined by grade level expectations	Experiences determined by child capabilities	Experiences determined by child interest	Experiences determined by teacher's recognition & understanding of child's level of cognitive functioning and interest
15	Commercial Materials	Commercial materials not used or used inappropriately	Commercial materials predominate; followed like a cookbook	Commercial materials used as a resource	Commercial materials complement each other & support other classroom experiences

of the variables. The revised matrix used in the spring is shown in Figure 2. These changes will be referred to again when the fall-spring rating changes are discussed.

Methodology

To obtain an initial overview of program implementation at each of the ten Follow Through sites, CAs were asked in the fall to observe the classrooms for which they would be responsible throughout the year and to rate them individually on the Implementation Matrix. Ratings were obtained from 162 of the 163 Follow Through classrooms. In order to obtain a rough estimate of the reliability of ratings within each center, each consultant and CA first observed a classroom simultaneously, rated the classroom separately, and then discussed the rationale for their ratings. Afterwards, each CA observed the rest of her classrooms and checked the matrix level most representative of the implementation status for each variable. In addition, CAs were asked to fill out a separate form on which they gave an explanation of each rating and suggestions for an appropriate training technique to use in changing a particular level of classroom operation toward better implementation of the Cognitive Curriculum. The rating forms were returned to the High/Scope Foundation for processing.

After completion of the fall ratings, suggestions were given for revisions on the matrix. In addition to the changes in the descriptions of various variable levels, suggestions resulted in changes in the rating procedure itself. In the fall, CAs were simply instructed to rate each classroom as A, B, C, or D on each variable. Many CAs, however, felt it necessary to differentiate classrooms within levels as, for example, high B or low D, or in transition between C and D. To accommodate this, a 15-point rating scale was employed in analyzing the the data and, subsequently, in collecting the spring ratings. The 15 points correspond to the four levels as follows:

1 2 3 4 5 6 8 9 10 12 13 14 15

Variable	Level A	Level B	Level C	Level D

Transitions between levels were noted by ratings of 4, 8, and 12; checking a-number to the left, middle, or right within a level allowed for variation among classrooms within any one given level.

FIGURE 2: IMPLEMENTATION MATRIX USED IN SPRING, 1973.

		A	T*	B	T*	C	T*	D
	VARIABLE	1 2 3	4	5 6 7	8	9 10 11	12	13 14 15
1	ROOM ARRANGEMENT	Teaching stations but no learning centers		Teaching stations plus 1 or 2 learning centers without a specific focus		Teaching stations & learning centers; activities, stimulating but unrelated to each other		Integration of teaching stations & learning centers so that they become one & the same
2	DAILY ROUTINE	Children rotate among teaching stations		Children rotate among teaching stations & 1 or 2 learning centers (usually used for free play or busy work)		One-half day teacher initiated (group time); one-half day pupil initiated (work time)		Integration of entire day. Individualized & small group instruction is related to child's activity at learning centers
3	CHILD PROCESS Plan	No opportunity for planning		Children assigned to center by adult or may choose but are required to get to all centers		Child chooses center but makes no specific plan for activity		Child makes choice of center & discusses plan with teacher
4	Work	No work time		Adult assigns activity to be done at center		Work undertaken varies with passing interest		Child completes plan
5	Represent	No opportunity for representation		No representation, or representation directed by teacher		Superficial representation at child's discretion		Child represents experience in his way
6	Evaluate	No opportunity for evaluation		No evaluation, or simple reporting of presence at a center		Voluntary show and tell or mandatory reporting		Child evaluates plan & uses evaluation to make new plans, to extend or modify previous plans
7	DAILY PLANNING & EVALUATION Process	No daily planning occurs or head teacher does planning		Team plans together but each member for his own area		Team integrates plans. No developmental evaluation of individual children		Planning & evaluation are a result of group process
8	Outcome	Same lessons and activities for all groups. Child involvement determined entirely by teacher		Activities planned for different groups. Children grouped in some arbitrary way. Child involvement determined largely by teacher with some child-initiated activity		Activities and grouping are a direct outcome of team evaluation of activities rather than child evaluation. Child involvement is self-initiated but		Planning for individual children is a result of ongoing team evaluation. Child involvement is self-initiated but related to teacher's evaluation

9	Basis	Concern for skill development and grade level expectation	Concern for skill development and grade level expectation but allows for some diverse activities based upon individual differences	Awareness of the importance of real experiences & the application of levels of representation & cognitive structures	Integration of levels of representation, cognitive structures and skill development
10	TEACHER DIRECTION	Teacher domination & control of content & process	Teacher direction with opportunities for children to choose among restricted alternatives	Teacher provides little direction but allows for peer interaction & interaction with materials	Teacher directs by structuring the environment so that children can initiate activities and work independently; teacher serves as a resource
11	CHILD-TEACHER INTERACTION Teacher-Initiated Instruction	No opportunities for child-initiated activities	Few opportunities for child to initiate activities but within planned activity there is room for divergent responses	Strong evidence of divergent responses during individualized & small group instruction	Divergent responses used as a basis for further individualized & small group instruction
12	Work Time	No work time	Children's alternatives & behavior mostly structured by teacher	Most activities initiated by child; little teacher interaction	Child chooses activity. Teacher interacts with child.
13	LEARNING EXPERIENCES Skills	Dominated by skill development and grade level expectations	Dominated by skill development and grade level expectation but allows for some differences in ability	Skill development incidental; follows no particular sequence	Skill development integrated with other activities as a result of individual child's needs
14	Cognitive Development	Experiences determined by grade level expectations	Experiences determined by grade level expectations but allows for some differences in ability	Experiences determined by child interest; some teacher awareness of child's cognitive development	Experiences determined by teacher's recognition & understanding of child's level of cognitive functioning and interest
15	Commercial Materials	Commercial materials not used or used inappropriately	Commercial materials predominate; followed like a cookbook	Commercial materials used as a resource	Commercial materials complement each other & support other classroom experiences

*T = transition between levels

The form used for obtaining the ratings in the spring is shown in Figure 3.

Formative Feedback

After the ratings were processed, tables were completed (both in the fall and spring) for each center to show the mean and median ratings across all classrooms on each variable. In addition, mean and median ratings were completed across all 15 variables within each classroom. What resulted was a profile of each center's classrooms.

An example of one center's ratings for the fall can be found in Table 1. All the classrooms rated by the CAs are identified by number across the top of the table (01, 02, etc.). The classrooms rated by the consultant are listed to the right of the CAs' ratings.

The numbers of the variables (room arrangement, daily routine, etc.) on which the ratings were made are listed down the left-hand side of the table. Each row shows the ratings across all classrooms. The ratings on Variable 1 (room arrangement) are in the first row, the ratings on Variable 2 (daily routine) appear in the second row, and so on. The last two rows, at the bottom of the table, are the mean and median ratings for all 15 variables for each individual classroom. These figures indicate a given classroom's average level of implementation.

To the left of the table, the second and third columns give the mean and median ratings for all classrooms on each variable. For example, the mean rating across all classrooms on Variable 1 (room arrangement) was 9.7, that is, the middle of Level C; on Variable 7 (daily planning and evaluation-process) the mean rating was 4.0, or midway between Level A and B. These figures indicate the center's average level of implementation on each of the 15 variables.

The ratings collected for estimating reliability appear in the right-hand section of the table. These columns give the consultant ratings (identified by classroom number) and the difference between the consultant's and CA's rating on each variable, the average of the consultant's ratings, and the average of the differences between the CA and consultant.

Tables similar to this one were prepared for each center in the spring (see Table 2). A third table for each center was also prepared in which the rating differences between fall 1972 and spring 1973 were presented (see Table 3). Differences were determined by subtracting fall ratings from spring

FIGURE 3

CLASSROOM IMPLEMENTATION MATRIX CHECKLIST
SPRING, 1973

Classroom Implementation Status

Matrix Draft 5

Center ______________________

Date ______________________

Grade ______________________

Teacher ______________________

C.A. ______________________

Circle the number that best represents the status of classroom implementation of the Cognitively Oriented Curriculum at this time.

Levels

Variable	A			T*	B			T*	C			T*	D		
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

*T = transition between levels

Table 1

Ratings of Follow Through Classrooms for Center X on Implementation Matrix, Fall 1972

	CA Ratings														Consultant Ratings			
			Classrooms															
Variable	Mean	Median	01	02	03	04	05	06	07	08	09	10	11	12	11	Diff.*	12	Diff.*
1	9.7	10	10	14	10	10	10	10	10	10	6	6	10	10	10	0	6	4
2	8.7	10	10	10	10	6	10	10	10	10	6	6	6	10	6	0	6	4
3	10.0	10	14	10	10	10	10	10	10	10	6	6	10	14	14	4	10	4
4	9.3	10	14	10	10	10	10	6	6	10	10	6	10	10	10	0	6	4
5	8.0	8	10	10	6	6	6	6	10	10	10	6	6	10	14	8	6	4
6	8.7	10	10	6	10	6	10	10	10	10	10	6	6	10	10	4	10	0
7	4.0	2	2	2	2	2	2	10	6	6	6	2	2	6	6	4	2	4
8	6.0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	0
9	6.7	6	10	14	10	6	10	2	6	6	6	2	2	6	6	4	2	4
10	7.3	6	6	14	6	10	10	6	6	10	6	2	6	6	10	4	6	0
11	7.0	6	6	10	10	6	6	6	10	10	6	2	6	6	6	0	2	4
12	10.3	12	14	14	14	10	14	6	6	14	6	6	6	14	10	4	10	4
13	6.7	6	6	14	6	2	6	6	6	14	6	6	2	6	6	4	6	0
14	5.0	6	6	10	6	2	6	6	6	6	2	2	2	6	10	8	2	4
15	7.6	10	10	10	10	--	10	2	10	10	2	10	--	2	--	-	2	0
Mean Rating			8.9	10.2	8.4	6.5	8.4	6.8	7.8	9.4	6.2	4.9	5.7	8.1	8.9	3.1	5.5	2.7
Median Rating			10	10	10	6	10	6	6	10	6	6	6	6				

---

*) Degree of difference between CA rating and consultant rating.

Table 2

CA Ratings of Follow Through Classrooms for Center X on Implementation Matrix, Spring 1973

VARI-ABLE	MEAN	MEDIAN	CLASSROOMS 1	2	3	4	5	6	7	8	9	10	11	12
1	10.9	11.0	11	14	12	10	10	11	10	10	11	7	14	11
2	11.1	11.0	11	14	12	12	10	11	10	11	10	7	14	11
3	13.1	13.5	15	15	13	15	14	14	11	10	13	10	14	13
4	13.0	13.5	15	15	15	12	14	13	12	10	13	9	14	14
5	12.1	12.5	12	15	14	10	9	11	13	13	13	9	12	14
6	12.5	12.5	12	15	15	15	14	11	11	11	12	7	14	13
7	11.5	13.0	15	15	14	15	2	9	13	11	10	7	14	13
8	9.7	9.5	7	8	14	12	6	9	11	9	10	7	11	13
9	9.6	9.5	12	15	12	10	10	7	7	7	9	7	8	11
10	9.9	10.0	8	15	5	8	6	10	10	11	11	7	14	14
11	10.9	10.0	12	15	12	10	10	11	10	10	10	7	14	10
12	13.0	13.0	15	15	9	14	14	13	13	13	13	9	15	13
13	9.4	7.0	15	15	14	7	6	7	7	7	7	7	8	13
14	10.9	10.5	15	15	13	10	14	7	9	11	8	7	12	10
15	12.3	12.5	14	14	14	14	12	10	11	13	10	9	15	12
MEAN RATING			12.6	14.3	12.5	11.6	10.1	10.3	10.5	10.5	10.7	7.7	12.9	12.3
MEDIAN RATING			12.0	15.0	13.0	12.0	10.0	11.0	11.0	11.0	10.0	7.0	14.0	13.0

Table 3

Rating Differences between Fall 1972 and Spring 1973 for Center X

VARIABLE	MEAN	MEDIAN	CLASSROOMS 1	2	3	4	5	6	7	8	9	10	11	12
1	1.2	1.0	1	0	2	0	0	1	0	0	5	1	4	1
2	2.4	1.0	1	4	2	6	0	1	0	1	4	1	8	1
3	3.1	3.5	1	5	3	5	4	4	1	0	7	4	4	-1
4	3.7	3.5	1	5	5	2	4	7	6	0	3	3	4	4
5	4.1	4.5	2	5	8	4	3	5	3	3	3	3	6	4
6	3.8	2.5	2	9	5	9	4	1	1	1	2	1	8	3
7	7.5	11.0	13	13	12	13	0	-1	7	5	4	5	12	7
8	3.7	3.5	1	2	8	6	0	3	5	3	4	1	5	7
9	2.9	3.5	2	1	2	4	0	5	1	1	3	5	6	5
10	2.6	4.0	2	1	-1	-2	-4	4	4	1	5	5	8	8
11	3.9	4.0	6	5	2	4	4	5	0	0	4	5	8	4
12	2.7	1.0	1	1	-5	4	0	7	7	-1	7	3	9	-1
13	2.7	1.0	9	1	8	5	0	1	1	-7	1	1	6	7
14	5.9	4.5	9	5	7	8	8	1	3	5	6	5	10	4
15	4.7	2.5	4	4	4	***	2	8	1	3	8	-1	***	10

*** = Data missing in Fall or Spring or both.

ratings so that positive numbers indicate improved ratings. Differences between fall and spring ratings within each classroom are noted in the column directly beneath each classroom number. These figures reflect change over time for each classroom. Differences in means and the medians across all classrooms on each variable are noted in the first two columns. These figures reflect overall change on each variable. It would appear that the greatest changes occurred at this center on Variable 7 (daily planning and evaluation-process) while the least change occurred on Variable 1 (room arrangement).

Effects on Teacher Training and Curriculum Consulting

Immediate feedback was given to teachers and CAs in the form of center tables after both the fall and spring observations. Sponsor consultants worked closely with CAs in analyzing the ratings in terms of strengths and weaknesses of particular classrooms. On the basis of that knowledge, they planned systematic training sessions for certain classrooms and center workshops for all classrooms. At the September workshop, CAs and consultants prepared an "overlay" outlining training techniques appropriate for working with classrooms at various operational levels. For example, if a classroom were identifield on the matrix as operating at Level A on Variable 2 (daily routine), CAs might hold a workshop, intervene in classroom operation by means of an intervention team, exchanges, or demonstration teaching, or by holding weekly planning sessions with teachers. Discussions of how to better implement the program followed the identification of problem areas on individual center profiles of ratings.

By employing the Classroom Implementation Matrix to observe classrooms, CAs were better able to articulate program practices to their teachers. Sponsor consultants felt the matrix provided an immediate frame of reference from which a new CA could discuss various aspects of the Cognitive Curriculum. Those CAs who felt insecure about their own understanding of the program and somewhat inadequate to the task of implementation began using the matrix in discussions with teachers about the integration of curriculum goals throughout the day. For example, permitting a child to choose his work time activity requires that the teacher incorporate academic skills into the total day. CAs were receptive to use of the matrix as were many teachers who saw its value for self-evaluation.

A questionnaire was mailed out in the spring of 1973 to determine what benefits, if any, CAs experienced from using the matrix as a formative evaluation instrument. Of 23 CAs at the ten Follow Through sites, 61% responded that they had used the matrix extensively since it was first introduced in the fall while only 15% reported using it very little in their work with teachers. None of the CAs reported finding the matrix of no use. Seventy-seven percent found it to be useful, very useful, or extremely useful.

Over 80% of Follow Through teachers invited further discussion of the matrix by asking CAs to come into the classroom or by requesting help. In some instances, Follow Through teachers wanted extra copies for their continuous use. All respondents felt the matrix clarified issues of implementation and thus posed little or no threat to teachers. One CA indicated that her teachers felt less threatened if they were able to evaluate themselves.

In general, teachers used the matrix to:

- Critique self
- Elaborate upon implementation variables and operational levels
- Brainstorm about where they are, what can be changed, and how to proceed with changes
- Pinpoint strengths and weaknesses in individual classrooms

All respondents indicated favorable reactions by teachers to the matrix. Most notably, they felt the matrix gave teachers direction and a means for self-evaluation.

CAs reported using the matrix to:

- Observe classrooms
- Prepare for workshops and conferences
- Carry out discussions with teachers and paraprofessionals on what the matrix is and how it might be used
- Determine specific areas in which further attention is needed
- Lecture to non-Follow Through groups
- Discuss individual ratings as well as school profile
- Coordinate team planning

When asked in what ways they found the matrix most helpful, CAs gave the following responses:

- Developing particular implementation variables
- Helping teachers focus on various aspects of the Cognitively Oriented Curriculum
- Defining terms so every one had the same interpretation of what was expected
- Suggesting directions to be taken toward better implementation
- Assessing general classroom implementation
- Preparing for planning sessions with teachers as well as workshops on the basis of observations

When asked in what ways they found the matrix least helpful, CAs reported:

- Changing teacher attitudes
- Helping teachers continue skill development in a child-initiated process; i.e., the matrix focused on the why and not the how
- Trying to use the matrix all at once rather than focusing on a limited number of variables

Over 30% of the CAs discussed the matrix with other school personnel including project directors, principals, non-Follow Through teachers, university students visiting classrooms, and school personnel from other districts. Many of these same persons rquested copies for their own use and non-Follow Through personnel have shown interest in its use in other classrooms.

Summary

Several functions were thus served by the matrix feedback. It served:

- To stimulate discussion about curriculum implementation, to classify terminology, and to judge the accuracy of these initial ratings (with particular emphasis on discrepancies between CA ratings and consultant ratings;

- To identify and define areas in which changes and modifications should occur, noting particular strengths and weaknesses;
- To point out those classroom variables that need focused attention across all classrooms and set priorities for further training;
- To map out appropriate training strategies utilizing the training materials and expertise available at High/Scope;
- To recommend any necessary revisions of the matrix itself.

Results and Discussion

As a formative evaluation instrument, the Classroom Implementation Matrix was devised to fulfill three major functions:

- Record program implementation progress in terms of goals specific to the curriculum model
- Use this information to feed back into the system to permit modifications in the instructional-learning process
- Serve as an aid to teacher training and curriculum consulting

The feedback function, which actually incorporates the teacher training and curriculum consulting functions, was discussed in the preceding section. In this section the results are examined for findings about the implementation process itself.

Evidence of Reliability

When the fall ratings were obtained, the High/Scope field consultant to each center rated at least one classroom along with each CA. The discrepancies between consultant and CA ratings were tabulated to provide an indication of how reliably the matrix could be applied. Table 4 provides an indication of the consistency among raters. The first set of figures pertains to the 22 classrooms for which both a CA and a consultant applied the matrix. The number of sizeable discrepancies (i.e., at least one complete matrix level, or three scale points) ranged from four (Variable 8) to 12 (Variable 12). The number of times a variable was not rated (blanks) ranged from zero for Variable 1 to six for Variable 8. The second major set of figures reports

Table 4

Implementation Matrix Rating Discrepancies and Missing Data

Variable	CA and Consultant Observations*			CA Observations**	
	No. of Discrepancies (by 1 or more levels)	No. of Blanks	Total No. of Blanks and Discrepancies	No. of Blanks Fall	Spring
1	5	0	5	0	0
2	8	1	9	3	0
3	7	1	8	2	0
4	8	1	9	10	0
5	6	1	7	10	1
6	7	1	8	4	1
7	9	3	12	3	4
8	4	6	10	8	2
9	6	5	11	5	1
10	9	1	10	5	2
11	6	2	8	5	1
12	12	2	14	5	1
13	9	2	11	9	3
14	5	3	8	8	2
15	6	3	9	3	0

*Based on 22 joint CA-consultant observations

**Based on 163 CA observations

the number of ratings left blank when CAs made their individual ratings. There were no blanks for Variable 1, whereas Variables 4 and 5 were each omitted ten times by CAs.

The relatively high rate of CA-consultant discrepancies may be indicative of problems with the rating procedure. The discrepancies certainly suggest that some variables of the matrix were not highly reliable. The reason for this low reliability on some variables is not clear, but several possibilities exist. CAs and consultants may have had different conceptions of the definitions for the levels of the matrix variables. On the other hand, both may have understood the definitions in the same way but applied them differently. This could have occurred if, for example, the CA based his ratings on observations and conversations extending over a longer interaction with the teacher and classroom, whereas the consultant observed the classroom for a much shorter time. The number of blanks suggest that there were problems with understanding the definition of the labels for some variables since one reason for not completing a rating would have been an inability to match up observations of a classroom with the description of one of the levels.

Time and staff schedules did not permit the collection of reliability data on the revised matrix in the spring. On the basis of the amount of time the CAs and curriculum consultants spent working with the matrix and the revisions made for clarifying the matrix descriptions, one would expect the agreement among raters to be higher in the spring. At any rate, there is no reason to believe that the ratings were applied less reliably in the spring than in the fall. Simply in terms of the number of times CAs failed to rate a classroom on a variable (number of blanks in Table 4), there was considerable improvement from 80 in the fall to 18 in the spring.

Cautions for Interpretation

The joint CA-consultant ratings made in the fall showed six variables on which there were sizeable discrepancies for one-third or more of the ratings. These occurred on Variables 2, 4, 7, 10, 12, and 13. Even though this low reliability is difficult to interpret, as pointed out above, caution should be exercised when interpreting comparisons among classrooms on these variables.

Another reason for caution in interpreting implementation findings is that changes in the descriptions of some levels of some variables occurred between the times when the fall and spring ratings were made--compare Figures 1 and 2.

Implementation Findings

Mean ratings for the 15 matrix variables were computed for all ten centers in the fall and in the spring. Fall-spring changes for each center and for each variable were also computed. These findings are presented in Tables 5-7.

On all variables there was positive change from fall to spring. The greatest changes occurred on the following variables (see Table 7):

Daily Planning and Evaluation

Variable 7	Process
Variable 8	Outcome
Variable 9	Basis

Child-Teacher Interaction

Variable 11	Teacher-initiated instruction

The least changes occurred on the following variables:

Variable 1	Room Arrangement
Variable 2	Daily Routine
Variable 6	Child Process--evaluate
Variable 13	Commercial materials

As might be expected, the variables on which there was the greatest change were also the variables on which classrooms were rated the lowest in the fall (see Table 5). The variables on which the least amount of change occurred, however, were not necessarily highly rated in the fall. The mean fall rating for all 15 variables across all centers was 9.08 and Variables 1, 2,6, and 13 were slightly above that mean. The rank-order correlation of the mean fall and spring ratings on each variable was .80 indicating that there was considerable consistency from fall to spring in how well variables were implemented.

There was also a high correlation (.75) between the centers' mean ratings from fall to spring. The centers with the greatest overall change were Chicago, Denver, Greeley, and Leflore County, Mississippi. The mean increase was equivalent to more than one matrix level for each of those centers. (In Trinidad fall ratings were carried out by CAs whereas spring ratings were done by individual teachers so the validity of those changes is questionable.) The least change occurred in Seattle and Riverton.

In examining what the matrix results reveal about levels of implementation, some interesting findings emerge. In the

Table 5: Mean Ratings for Ten Follow Through Centers, Fall 1972

Vari-able	Mean Rating	CENTERS									
		Central Ozarks	Chicago	Denver	Greeley	Leflore County	Okaloosa County	P.S. 92	Riverton	Seattle	Trinidad
1	10.4	11.4	9.5	9.7	11.3	11.7	11.9	9.3	11.2	9.8	8.5
2	9.2	8.8	7.1	8.7	7.8	11.4	10.9	8.7	10.7	8.6	9.2
3	10.8	11.7	8.7	10.0	10.2	11.4	12.6	9.7	11.5	12.1	10.3
4	10.0	10.6	8.9	9.3	8.0	11.2	11.8	9.5	11.5	10.9	8.5
5	9.5	10.6	9.1	8.0	10.0	11.2	11.6	7.6	11.6	8.6	6.9
6	9.8	10.5	8.3	8.7	9.7	11.9	11.4	8.4	11.0	9.6	8.1
7	7.9	10.2	6.9	4.0	8.0	8.3	11.3	6.5	9.6	8.6	5.8
8	7.8	9.1	7.3	6.0	6.0	7.9	11.2	7.9	9.8	8.0	4.9
9	7.8	8.9	6.9	6.7	8.6	7.8	11.1	5.9	9.1	7.7	4.8
10	8.3	9.6	7.9	7.3	7.8	9.9	10.9	7.2	9.1	6.3	6.6
11	8.1	8.6	6.0	7.0	7.8	10.1	11.0	6.7	11.2	6.8	5.7
12	9.3	8.5	8.4	10.3	7.8	8.9	12.5	8.6	11.6	9.4	6.9
13	9.6	9.7	8.4	6.7	10.5	12.9	12.4	6.7	13.1	9.8	6.0
14	8.5	9.2	7.1	5.0	6.8	10.9	11.7	9.0	11.5	8.2	5.7
15	9.2	9.7	7.3	7.6	11.3	11.7	10.9	7.5	11.2	9.2	5.4
Mean Rating		9.8	7.9	7.7	8.8	10.5	11.5	7.9	10.9	8.9	6.9

Table 6: Mean Ratings for Ten Follow Through Centers, Spring 1972

Vari-able	Mean Rating	CENTERS									
		Central Ozarks	Chicago	Denver	Greeley	Leflore County	Okaloosa County	P.S. 92	Riverton	Seattle	Trinidad
1	11.7	12.7	12.0	10.9	11.8	13.4	12.9	10.4	12.3	10.4	10.3
2	11.1	11.1	11.7	11.1	12.0	11.9	12.8	9.8	11.1	9.8	9.7
3	12.7	12.5	12.7	13.1	12.3	13.8	14.2	11.7	12.2	12.1	12.7
4	12.4	12.0	12.1	13.0	12.2	14.3	13.9	11.2	12.8	11.6	11.1
5	12.2	12.1	12.9	12.1	12.7	14.2	13.5	10.5	12.6	10.2	11.2
6	11.6	12.4	11.9	12.5	12.1	14.2	12.9	9.5	11.6	10.2	9.2
7	11.3	11.9	11.6	11.5	12.7	13.0	12.9	8.7	12.1	8.7	10.2
8	10.8	11.7	11.4	9.7	11.7	12.9	13.1	9.3	10.6	7.7	9.5
9	10.6	11.4	10.9	9.6	11.8	12.8	12.7	9.5	11.8	7.7	7.9
10	10.7	11.9	11.2	9.9	11.2	12.7	13.1	9.8	12.3	7.4	7.9
11	10.8	11.5	11.2	10.9	11.5	12.7	12.7	9.8	11.8	7.4	8.9
12	12.0	12.2	11.0	13.0	11.8	13.2	14.2	10.8	12.7	9.8	11.0
13	11.1	11.7	10.6	9.4	12.0	13.6	13.5	9.5	12.8	8.1	9.8
14	11.0	11.4	10.4	10.9	11.6	13.3	13.1	10.0	12.8	7.9	8.6
15	11.7	11.2	10.9	12.3	12.8	13.4	13.7	10.4	12.8	8.5	10.7
Mean Rating		11.8	11.5	11.3	12.0	13.3	13.3	10.1	12.2	9.2	9.9

Table 7: Rating Differences between Fall 1972 and Spring 1973 for Ten Follow Through Centers

Vari-able	Mean Differ-ence	CENTERS									
		Central Ozarks	Chicago	Denver	Greeley	Leflore County	Okaloosa County	P.S. 92	Riverton	Seattle	Trinidad
1	1.5	1.3	2.4	1.2	.5	2.3	1.0	1.3	1.1	0.6	3.0
2	1.9	1.8	3.3	2.4	4.2	1.1	1.9	1.1	0.4	1.3	1.7
3	2.1	0.8	4.0	3.1	2.1	2.9	1.6	2.0	0.7	0.1	3.7
4	2.5	1.0	3.2	3.7	4.2	3.8	2.1	1.8	1.3	0.3	3.8
5	2.7	1.6	3.9	4.1	2.7	3.7	1.9	2.0	1.0	1.5	4.2
6	1.9	2.0	3.7	3.8	2.4	2.9	1.5	0.5	0.6	0.7	0.9
7	3.5	1.7	4.7	7.5	4.7	5.0	1.6	2.1	2.5	0.2	5.2
8	3.1	2.6	4.2	3.7	5.3	5.3	2.7	1.6	0.8	-0.2	4.5
9	2.9	2.5	4.1	2.9	3.2	5.5	1.6	3.1	2.7	0.0	3.7
10	2.6	1.9	3.2	2.6	3.4	3.3	2.2	2.7	3.2	1.1	1.9
11	3.0	3.0	5.3	3.9	3.7	3.3	1.7	3.2	0.6	0.6	4.9
12	2.7	3.7	2.7	2.7	4.0	4.6	1.7	2.4	1.1	-0.4	4.3
13	1.5	2.0	2.1	2.7	1.5	1.5	1.1	2.7	-0.3	-1.7	3.8
14	2.6	2.2	3.3	5.9	4.9	3.0	1.4	1.1	1.3	-0.1	3.3
15	2.7	0.8	3.7	4.7	1.5	2.3	2.8	2.9	1.6	-0.7	7.0
Mean Difference		1.9	3.6	3.7	3.2	3.4	1.8	2.0	1.2	0.2	3.7

fall, implementation was rated highest in room arrangement, child process--plan, and child process--work. The Follow Through classrooms were, on the average, rated lowest in the three daily planning variables (process, outcome, and basis) and in teacher direction. These "low" ratings, however, were approximately at the midpoint of the rating scale. In the spring, the process of daily planning and evaluation was no longer among the lowest rated variables. The four lowest variables in the spring were the outcome and basis components of daily planning and evaluation, teacher direction, and the directed teaching aspect of child-teacher interaction. Again, these "low" ratings do not represent extremely poor implementation since they actually fall at about the midpoint of the "C" level. It is noteworthy that the three highest rated variables in the spring were all child process variables (plan, work, and represent).

It should be kept in mind that these findings represent the average across all ten centers. There was certainly great variation among classrooms. Nevertheless, it appears that when viewed by their own CAs the Follow Through classrooms were most like the model in the child process area and somewhat less like the model in teacher direction and daily planning and evaluation.

One question of general interest to those concerned with curriculum implementation is whether implementation is easier at some grade levels than others. The present data cannot answer that question directly since the implementation process began some time (in some cases, several years) before the implementation ratings were made. In Table 8 the spring mean rating for each grade level (across all centers) is given for each variable. The general picture is one of very consistent implementation levels across grades. Only in the case of three variables is there any indication that success of implementation might be a function of grade level. Variables 6, 10, and 11 show slight increases, suggesting that implementation is more successful in the higher grades. Variables 10 and 11 relate to teacher direction and directed teaching. In the third grade, teachers were somewhat more successful in structuring the environment so that children could initiate activities and in using divergent responses as a basis for further teaching.

Conclusions

When variables describing levels of implementation of a curriculum were used by individuals working with the curriculum to judge the implementation of classrooms, several useful

Table 8: Mean Ratings on Matrix Variable by Grade Level, Spring 1973

Variable	Kindergarten (31 classrooms)	First Grade (45 classrooms)	Second Grade (46 classrooms)	Third Grade (40 classrooms)
1	10.9	12.1	11.6	12.1
2	10.8	11.2	10.7	11.5
3	13.2	12.9	12.1	12.9
4	12.4	12.6	12.1	12.5
5	11.3	12.2	12.2	12.6
6	10.7	11.9	11.5	12.3
7	10.1	11.8	10.8	11.8
8	9.7	11.2	10.4	11.3
9	10.4	10.9	10.2	10.6
10	9.7	10.9	10.4	11.5
11	9.8	11.0	10.5	11.4
12	12.0	12.1	11.4	12.0
13	10.6	11.5	10.5	11.3
14	10.5	11.4	10.6	10.9
15	11.1	11.8	11.2	11.8

outcomes occurred. First, the curriculum assistants gained greater awareness of the features of the curriculum that are important for successful implementation. A second outcome was the formative evaluation provided by the summaries from the ratings. The CAs at each Follow Through site were able to see what variables their classrooms needed assistance with and were thus in a position to plan workshops or other procedures aimed at correcting the situation. Finally, as an evaluation of the implementation process itself, the ratings were somewhat less successful. Although there were some interesting findings, the reliability problems and definitional changes in the matrix occurring between the fall and spring ratings make the results less conclusive than they might otherwise be.

The development of the Implementation Matrix has been an important step in the process of implementing and evaluating the Cognitively Oriented Curriculum. Perhaps its most important contribution is that of identifying the dimensions of the instructional model. This has served, not only to pinpoint areas of strength and weakness in the implementation process, but also to provide a basis for more meaningful program evaluation. As the Implementation Matrix is used in the future, the ratings may provide useful information for interpreting other findings from the evaluation.

REFERENCE

Bloom, B. S., Hastings, J. T., & Madaus, G. F. (Eds.) *Handbook on formative and summative evaluation of student learning.* New York: McGraw-Hill, 1971.